NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Raleigh Regional Office
County: Chatham
NC Facility ID: 1900015
Inspector's Name: Steven Carr
Date of Last Inspection: 05/08/2015
Compliance Code: B / Violation - emissions

Facility Data

Applicant (Facility's Name): Arauco Panels USA, LLC

Facility Address:
Arauco Panels USA, LLC
985 Corinth Road
Moncure, NC 27559

SIC: 2493 / Reconstituted Wood Products
NAICS: 321219 / Reconstituted Wood Product Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP: MACT Subpart DDDD
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Todd Phillips Environmental Health & Safety Manager (919) 545-5849 985 Corinth Road Moncure, NC 27559	Tom Quesenberry Site Manager (919) 642-6658 985 Corinth Road Moncure, NC 27559	Todd Phillips Environmental Health & Safety Manager (919) 545-5849 985 Corinth Road Moncure, NC 27559

Application Data

Application Number: 1900015.08D, 12C, 16A
Date Received: 11/03/2008, 05/04/2012, 01/29/2016
Application Type: Renewal/Modification
Application Schedule: TV-Renewal/Significant Modification
Existing Permit Data
Existing Permit Number: 03449/T44
Existing Permit Issue Date: 05/27/2015
Existing Permit Expiration Date: 04/30/2020

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2014	20.61	381.21	549.26	550.64	137.70	89.57	36.76 [Formaldehyde]
2013	12.57	292.92	503.89	454.06	136.96	79.08	32.03 [Formaldehyde]
2012	13.66	313.22	533.29	523.84	137.67	222.00	140.87 [Formaldehyde]
2011	14.94	290.11	493.00	493.05	122.81	161.78	70.94 [Methanol (methyl alcohol)]
2010	11.13	278.79	487.17	519.92	117.12	125.27	58.30 [Methanol (methyl alcohol)]

Review Engineer: Joseph Voelker

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 03449/T45
Permit Issue Date:
Permit Expiration Date:

I. Introduction and Purpose of Application

Arauco Panels USA LLC (formerly UNIBOARD USA LLC) owns and operates a facility in Moncure, NC that is permitted to produce medium density fiberboard (MDF) and particle board (PB).

The purpose of this application is to address:

Task	Description
1	The renewal of permit no. T34, which expired on July 31, 2009 (application no. 9800015.**08D**)
2	The Part II application for the Part I applications 1900015.07A, 08C and 09B that addressed the rebuilding and modifications to the MDF plant (application no. 9800015.**12B**) (this application was consolidated into 9800015.**12C**)
3	Compliance of the particle board plant with MACT DDDD (application no. 9800015.**12C**)
4	Compliance of the MDF plant with MACT DDDD (application no. 9800015.**12A**) (this application was consolidated into 9800015.**12C**)
5	Modifications to the MDF plant performed primarily for compliance with MACT DDDD (application no. 9800015.**16A**).

II. Chronology

Date	Description
09/09/2008	Special Order by Consent No. 2008-002 was entered into between ATC Panels, Inc and the EMC This SOC was entered into because ATC (facility name at the time) was unable to meet the MACT DDDD compliance date of 10/01/2008. The facility originally intended on complying with the MACT under the low-risk" subcategory. However, that compliance option was vacated by DC Circuit Court decision. On 10/4/2007. The facility requested and received a compliance date extension until 10/01/2008. At the time, the most likely control technologies, thermal oxidizers and biofilters, posed technological uncertainties or resulted in an increase in other pollutants (i.e., NOx in the case of thermal oxidation) that the facility and the DAQ wished to avoid. The facility thought it was unlikely that the extended deadline would be met and hence entered into the SOC. The SOC required the facility to pursue alternative technologies. The technology chosen was shown to have met the requirements of completing performance testing for MACT DDDD but was an impractical solution given the expense of its operation and maintenance as well as complying with the M/R/R requirements of the MACT.
11/3/2008	An application was received and assigned application no. 1900015.08D for the renewal of permit no. T32
03/19/2010	SOC-2008-002 was modified to address facility ownership changes as well as modify some of the milestone dates.
01/31/2012	An application was received and assigned application no. 1900015.12A All aspects of the application were addressed upon issuance of permit no. T43 on 01/22/2014 with the exception of MACT DDDD compliance of the MDF plant.
2/13/2012	An application was received and assigned application no. 1900015.12B to satisfy the permit application submittal requirements under 02Q .0504 which required (as stated in Permit No. T39): *The Permittee shall file a Title V Air Quality Permit Application pursuant to 15A NCAC 02Q .0504 for the air emission sources included in permit*

	*application **1900015.07A, .08C and .09B** and .11C on or before 12 months after commencing operation.* Note a brief description of the MDF plant modifications in permit applications 1900015.07A, .08C and .09B are in the **Permitting History** discussion in Section III. The MDF plant has subsequently been modified as described elsewhere in Section III and is also under current modification as described in application 16A. Section IV of this review document will address all current requirements applicable to the MDF plant.
5/14/2012	An application was received and assigned application no. 1900015.12C This application was submitted to address MACT DDDD for the Particleboard (PB) plant.
11/2/2015 (effective date)	Special Order of Consent (SOC) 2015-02 entered into between Arauco and the EMC. This SOC was entered into largely to address the MACT DDDD compliance issues associated with the technology chosen as a result of the previous SOC (2008-002).
01/29/2016	As required by SOC 2015-02. An application was received and assigned application no. 1900015.16A. This application will be discussed elsewhere in this document.

III. Permitting History

Arauco has changed ownership numerous times since the issuance of the initial TV permit (Permit no. T25, issued 09/22/2004) and has undergone many modifications. Each modification application since the initial TV permit is described below. In most cases, the changes did not result in any ongoing compliance issues and hence no in-depth discussion is required here. The review documents provide in-depth discussions of the specific modifications and are readily retrievable from the DAQ upon request.

However, the changes that had the biggest implications with air quality compliance were the removal of the RTO at the PB plant in permit no. T31 (01/30/2007) and the initial permitting of the completely rebuilt MDF plant in permit no. T32 (05/07/2008).

With the vacatur of the low-risk" subcategory option and the 10/1/2008 compliance date in MACT Subpart DDDD on June 19, 2007, Arauco (SierraPine at the time) was faced with having to install MACT compliant controls on the PB plant by the compliance date of 10/01/2007 and the newly permitted MDF plant upon construction. They requested and received a 1-year compliance extension but they entered into a SOC (2008-002) on 09/09/2008 so they could pursue the option of installing controls that at the time were thought to have advantages over the most common control strategies (i.e., thermal oxidation and bio filtration). This led ultimately to the installation of packed bed scrubbers with photochemical gas treatment. Both the PB and MDF plants installed these control systems and subsequently met the initial performance testing requirements under MACT Subpart DDDD. However, ongoing operation, maintenance, safety and cost issues led to yet another SOC being entered into (SOC -2015-02) on September 11, 2015 which provides a schedule for yet another strategy(s) to be implemented for MACT DDDD compliance.

As a result of these ongoing compliance issues, some MACT Subpart DDDD aspects of certain permit applications were not addressed (e.g., aspects of application nos. 12A, 12B, 12C). These issues will be addressed in this permitting action. Note that in the history presented below, these aspects that to date have not been addressed have been consolidated into application no. 12C.

The following is the permitting history since the issuance of the initial TV permit.

Active permit	App No.	date	Type	Outcome	Outcome date
T25	05A	02/18/2005	modification	returned	02/12/2007
Description					
The DAQ received an application from ATC Panels, Inc (formerly SierraPine Limited) on February 18, 2005 requesting authorization to replace equipment on the existing (MDF) manufacturing line. This application was deemed incomplete as described in a letter sent to Mr. Steve Lerch (SierraPine Limited) by Ms. Fern Paterson (NC DAQ) dated April 22, 2005. The letter requested that the Permittee provide additional information to NC DAQ no later than May 22, 2005, upon which date the application would be returned to the facility. NC DAQ has yet to receive any additional information as requested, and is hereby returning the application to ATC Panels, Inc. (enclosed). *In summary, no changes were implemented to the MDF plant until application 07A.*					

Active permit	App No.	date	Type	Outcome	Outcome date
T25	05B	09/22/2004	Appeal	T26	04/15/2005
Description					
This permit was issued in response to an appeal of the initial TV permit.					

Active permit	App No.	date	Type	Outcome	Outcome date
T26	05C	05/17/2005	Appeal	T27	10/7/2005
Description					
This permit was issued in response to a second appeal of the initial TV permit. The name also changed from Acongagua Timber Company to ATC Panels, Inc. (ATC). At issue were the monitoring requirements for wet electrostatic precipitator (ID No. PB-WESP) and the dry electrostatic precipitator (ID No. DESP).					

Active permit	App No.	date	Type	Outcome	Outcome date
T27	05E	11/3/2005	Modification - TV-Sign-501(c)(2)	T28	01/25/2006
Description					
ATC Panels requests a permit change (1900015.05E) pursuant to 501(c)(2) for changes to the (a) the Particle Board (PB) screening operation and (b) the construction of a short cycle laminating press.					

Active permit	App No.	date	Type	Outcome	Outcome date
T28	05G	12/21/2005	Modification - TV-Minor	T29	02/10/2006
Description					
ATC Panels requests permit clarifications pursuant to 502(b)(10) to specify the following: • The regenerative oxidizer **(ID No. 1515)** is authorized to control potential VOC emissions from any of **two** dryers in the particleboard mill simultaneously **(ID Nos. 1410, 1420, and 1430)** while operating only one of the two available combustion chambers. ATC Panels provides stack test results and information on residence times of the regenerative oxidizer to demonstrate that the one-chamber operating scenario meets the original operating design criteria of the control device; • The minimum allowable combustion chamber temperature at the regenerative oxidizer **(ID No. 1515)** may be determined by the most recent stack test data; and,					

- BACT for carbon monoxide emissions at the dryers **(ID Nos. 1410, 1420, and 1430)** is "best combustion practices", and is not associated with the operation of the regenerative oxidizer **(ID No. 1515)**.

Active permit	App No.	date	Type	Outcome	Outcome date
T29	06C	09/15/2006	Modification - TV-Minor	T30	01/30/2007
Description					
On September 15, 2006, the Division of Air Quality (DAQ) received Application No. 1900015.06C requesting a minor modification authorizing the operation of a new short cycle particleboard laminating press **(ID No. 3594)**.					

Active permit	App No.	date	Type	Outcome	Outcome date
T30	06D	10/20/2006	Modification – TV-Significant & PSD	T31	01/30/2007
Description					
The application includes a request to increase the process rates of existing particleboard dryers and to remove the associated regenerative thermal oxidizer.					

Active permit	App No.	date	Type	Outcome	Outcome date
T31	07A	11/03/2008	Modification - TV-Sign-501(c)(2)	T32	05/07/2008
Description					
ATC Panels has completely dismantled its existing MDF plant and would like to replace it with a new one. ATC has an existing particleboard plant at the facility. The MDF plant has not been in operation since December 2004. Although the existing MDF plant has been completely dismantled and is to be replaced by a new one, the modification is being treated as a minor modification per PSD purposes. Because of the timing issues and since the modification qualifies, the application will be a two part application to be processed as a 02Q 0501(c)(2) modification and will be processed per the two step process of 02Q .0504.					

Active permit	App No.	date	Type	Outcome	Outcome Date
T32	08D	11/03/2008	Renewal	Active	The issuance date of T44
Description					
Renewal application was submitted. Outcome will be the issuance of permit no. T44.					

Active permit	App No.	date	Type	Outcome	Outcome date
T32	08A and 08B	07/31/2008	Modification/Ownership/Name Change	T33	11/25/2008
Description					
ATC Panels, Inc. manufactures medium density fiberboard (MDF) and particleboard (PB), both of which are primarily sold to the furniture industry. ATC Panels has completely dismantled its existing MDF plant is replacing it with a new one (See application .07A)					

The purpose of this application is to:

1. Satisfy condition 2.2.A.2 in Permit T32 that states:

   STATE ENFORCEABLE ONLY

   2. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
   The Permittee shall submit a permit application and demonstration that facility-wide emissions of toxic air pollutants do not exceed acceptable ambient levels contained in 15A NCAC 02D .1100. The Permittee shall submit the permit application and demonstration on or before July 1, 2008.

2. Process an ownership change. From the August 21, 2008 cover letter

   Uniboard USA LLC (Uniboard) has signed an agreement to acquire the mill owned by ATC Panels, Inc. located in Moncure, NC (Facility ID No. 1900015). The sale was finalized and ownership transferred to Uniboard on August 1, 2008.

Uniboard has supplied the appropriate forms and documentation. Note that no contact information will be changed the existing contacts will continue to be employed by Uniboard.

3. Additionally, a Special Order by Consent (ORDER) became effective July 10, 2008 which has implications with respect to the compliance status of the facility with 02D .1111 or more specifically MACT Subpart DDDD. The ORDER was used to incorporate a schedule of compliance (SOC) for the facility, specifically the particleboard operations. Given that the permit was open anyway, the SOC was incorporated into the revision.

Additionally, given the ownership change, the SOC is requested to be transferred to Uniboard. This is beyond the scope of this permit review. However, it assumed that this will occur given the intent of the application letter and the language in paragraph XIV of the SOC. The DAQ files (including IBEAM) will be updated to reflect the name and ownership change. No further discussion in this review will be necessary.

Active permit	App No.	date	Type	Outcome	Outcome date
T33	08C	10/23/2008	Modification - TV-Sign-501(c)(2)	T34	04/22/2009
Description					
Uniboard USA LLC (Uniboard, but formerly ATC Panels) permitted a "new" MDF plant with the issuance of permit no. T32 on May 7, 2008. The MDF plant has not begun construction. The facility has changed ownership from ATC Panels to Uniboard as addressed in permit no. T-33. Upon purchase of the facility, Uniboard has modified the MDF project to include transfer of existing equipment from a facility in Canada and new emission control equipment. The process has been significantly reconfigured. The existing particle board (PB) operations are not affected by this modification. Note that Uniboard is operating under a SOC (Special Order of Consent) effective July 10, 2008 that addresses compliance of the PB operations with respect to 15A NCAC 02D .1111 (MACT Subpart DDDD). Because of the timing issues and since the modification qualifies, the application will be a two part application to be processed as a 02Q 0501(c)(2) modification and will be processed as the first step of the two step process pursuant to 02Q .0504.					

Active permit	App No.	date	Type	Outcome	Outcome date

T34	09B	07/24/2009	Modification - TV-Sign-501(c)(2)	**T35**	10/15/2009

Description

Uniboard USA LLC (Uniboard, but formerly ATC Panels) permitted a "new" MDF plant with the issuance of permit no. T32 on May 7, 2008.The facility had changed ownership from ATC Panels to Uniboard as addressed in permit no. T-33.

Upon purchase of the facility, Uniboard had modified the MDF project to include transfer of existing equipment from a facility in Canada and new emission control equipment. The process had been significantly reconfigured, most notably the removal of the RTO and the addition of a biofilter and scrubber system, and was issued permit no. T-34 issued on 04/22/2009.

Uniboard however has decided based on revised data, not to utilize the Biofilter and has submitted this permit application (09B) to remove it. Other changes will be made as well.

The existing particle board (PB) operations are not affected by this modification.

Note that Uniboard is operating under a SOC (Special Order of Consent) effective July 10, 2008 that addresses compliance of the PB operations with respect to 15A NCAC 02D .1111 (MACT Subpart DDDD).

Because of the timing issues and since the modification qualifies, the application will be a two part application to be processed as a 02Q 0501(c)(2) modification and will be processed as the first step of the two step process pursuant to 02Q .0504.

Active permit	App No.	date	Type	Outcome	Outcome date
T35	09C	08/31/2009	112(j)-Part II-TV-Significant	**T36**	10/18/2010

Description

Uniboard USA LLC is located in Moncure, Chatham County, North Carolina. Application No. 9700001.09A, received September 17, 2009, is a Part 2 MACT "Hammer" application for one natural gas- and No. 2 fuel oil-fired boiler rated at 4.7 million British thermal units per hour (MMBtu/hr) and three natural gas-fired hot oil heaters, each rated at 24 MMBtu/hr.

Active permit	App No.	date	Type	Outcome	Outcome date
T36	10B	12/23/2010	Modification – TV-Minor	T37	05/20/2011

Description

Uniboard USA LLC (Uniboard) has submitted this application to address the following:

1. The replacement of an existing fire pump engine (IDFP-1) with a new 347 HP Unit.
2. The addition of a 1592 HP diesel fuel fired emergency generator
3. The correction of the descriptors for the bag filters ID Nos. CD03 and CD 07
4. A request to utilize PM CEMS in place of COMs for purposes of NSPS Subpart Db compliance on the energy system (ID No. ES-02-A)

The application was subsequently amended to not address item 4 (NSPS PM CEMS monitoring).

Active permit	App No.	date	Type	Outcome	Outcome date
T37	11B	04/18/2011	Modification – TV – Significant	T38	07/11/2011
Description					
Uniboard USA LLC (Uniboard) owns and operates a medium high-density fiberboard (MDF) plant in Moncure, NC. Uniboard recently installed new equipment at the MDF plant. A biomass-fired Energy System (ID No. ES-02A) provides direct heat to dry resinated fiber. Uniboard is making a request to: 1. remove all conditions associated with the applicability of the New Source Performance Standard (NSPS) 40 CFR Subpart Db including the continuous opacity monitoring system (COMS and CEMS) requirements found therein; and 2. obtain DAQ concurrence that the biomass-fired MDF Energy System (ES-02A) at the Uniboard facility is defined as a *process heater* and not a *steam generating unit* as defined in Subpart Db and therefore not subject to Subpart Db; and, the *primary function* of the Energy System is to produce a final product. It will be shown in Section III that this modification meets the requirements to be processed as a significant modification under 15A NCAC 02Q .0501(d)(2).					

Active permit	App No.	date	Type	Outcome	Outcome date
T38	11C	07/25/2011	Modification–TV–Sign–501(c)(2)	T39	09/27/2011
Description					
Uniboard USA LLC (Uniboard) has submitted this application to address the installation of a wet scrubber to meet the PCWP MACT requirements at the particleboard plant, per the requirements of Special Order by Consent 2008-002.					

Active permit	App No.	date	Type	Outcome	Outcome date
T39	12A	01/31/2012	Modification-TV-Significant	T43 - items 2- 4 Item1 - still active Consolidated in to app 12C	05/04/2012
Description					
On January 31, 2012 Uniboard (soon to be Arauco) submitted a permit application (no. 1900015.**12A**) to demonstrate, with respect to the MDF plant only: • Compliance with 40 CFR 63 Subpart DDDD • Compliance with the existing PSD avoidance condition • Compliance with existing 15A NCAC 02D .0515 condition • Compliance with existing 15A NCAC 02D .0504 condition The application does not request any physical modifications but rather addresses the testing requirements that are contained in the current permit (Permit No. T39). As such further discussion will be presented in context of the applicable regulations.					

Items 2 through 4 above were addressed in conjunction with the applications which resulted in the issuance of T42. Item 1 was consolidated into application 12C.

Active permit	App No.	date	Type	Outcome	Outcome date
T39	12B	2/13/2012	Modification-TV-Significant	Consolidated into 12C	05/14/2012
Description					
Uniboard submitted a construction permit application and two subsequent revisions to that application for a new MDF plant in 2007, 2008, and 2009 (application Nos. 1900015.07A, .08C and .09B). *The* new MDF Plant was permitted using the 2-part process in 20 .0504. Per our recent conversation, this letter serves as our request for an operating permit for the new MDF plant (e.g., this submittal is the Part 2 application for 1900015.07A, .08C and .09B).					

Active permit	App No.	date	Type	Outcome	Outcome date
T39	12C	5/21/2012	Modification-TV-Significant	Active	TBD
Description					
This application was submitted to address PCWP MACT Notification of Compliance Status, as specified in 40 CFR §63.9(h)(l)-(6) for the Particleboard (PB) plant and as the second step of the significant modification process initialed with the issuance of permit no. T39. *The application was intended to include monitoring parameters for inclusion in the permit. However, the monitoring proposed was not consistent with the monitoring used during the compliance demonstration testing.* *The Permittee has subsequently revised its compliance approach with respect to MACT Subpart DDDD for the PB plant. The revised approach is being addressed in the current permitting action associated with the renewal (08D).*					

Active permit	App No.	date	Type	Outcome	Outcome date
T39	12D	04/25/2012	TV-Ownership Change	T40	08/23/2012
Description					
Arauco Panels USA LLC (formerly UNIBOARD USA LLC) owns and operates a facility in Moncure, NC that is permitted to produce medium density fiberboard (MDF) and particle board (PB). This application was initiated to address the ownership change and name change of the subject facility. This information contained in this application was originally intended to be consolidated into an existing significant permit application but because of timing issues it was decided to process the ownership and name change separately.					

Active permit	App No.	date	Type	Outcome	Outcome date
T40	13A	04/08/2013	Modification-TV-Minor	T41	04/12/2013
Description					
Arauco-USA is requesting a minor modification to Arauco's Moncure, North Carolina Title V Permit 03449T40. On March 09, 2013, a fire destroyed the finishing sander baghouse CD-2006. Arauco notified the Agency of a change to ensure equivalent control in which baghouse CD-3515 was moved in to the position of CD-2006 and the systems feeding cyclones CD-3512B and CD-3500 were stopped.					

This modification will address the reconfiguration of the affected emission sources and control devices.

Active permit	App No.	date	Type	Outcome	Outcome date
T41	13D	08/01/2013	Modification-TV-Significant	N/A	Withdrawn

Description

Arauco submitted this application for a permit modification of Air Permit No. 03449T41for the replacement of a wet electrostatic precipitator (WESP), Control Device No. CD-PB-WESP, with a new WESP as required by Special Order by Consent, SOC 2013-002, dated June 3, 2013.

This application was withdrawn as it was discovered that the main problems were associated with the process configuration and not the control device.

Active permit	App No.	date	Type	Outcome	Outcome date
T41	13E	12/20/2013	Modification TV-Minor	T42	01/01/2014

Description

Arauco Panels USA LLC (formerly UNIBOARD USA LLC) owns and operates a facility in Moncure, NC that is permitted to produce medium density fiberboard (MDF) and particle board (PB).

Arauco has submitted the following request as stated in the application:

> The Arauco Panels Moncure particleboard mill currently operates a biomass-fired Wellons unit (ID No. 3201) that provides heat to the particleboard press thermal oil system and exhausts to the particleboard dryers. The facility proposes to begin firing natural gas in the system using an existing natural gas burner and to vent the exhaust to the atmosphere when burning natural gas. The modification will consist of the addition of a natural gas train (piping). The facility still needs biomass firing capability in this unit; therefore, we are requesting the addition of an alternate operating scenario (AOS) to the permit for natural gas-firing.

Additionally, the Permittee is requesting to fire natural gas in the Wellons unit as it is currently configured, that is, exhausting directly to the particle board dryers.

Active permit	App No.	date	Type	Outcome	Outcome date
T42	13B and 13C	04/20/2013 and 05/31/2013	Modification – TV-Significant	T43	01/22/2014

Description

Arauco Panels USA LLC (formerly UNIBOARD USA LLC) owns and operates a facility in Moncure, NC that is permitted to produce medium density fiberboard (MDF) and particle board (PB).

A. Application 1900015.13B - MACT ZZZZ for emergency generator (ID No. ES-ODG)

Permit condition 2.1.J.3.c. states:

c. The permittee shall submit a permit application demonstrating compliance with this rule by May 3, 2013 for the emergency generator **(ID No. ES-ODG),** which is an existing emergency stationary RICE at a major source of HAP emissions.

This application (13C) was submitted in response to this requirement. Because the MACT ZZZZ rule (as well as the NSPS IIII rule) has been revised since the conditions were originally placed into the air permit, all MACT ZZZZ and NSPS IIII conditions will be updated as part of this application as well.

This application addresses no physical modifications at the facility.

Because the application addresses significant change in existing monitoring permit terms or conditions (condition 2.1.J.3.c.) this application will be processed as a significant modification pursuant to 15A NCAC 02Q .0516.

B. Application 1900015.13C – MDF Plant PSD Avoidance Limits Revisited

This permit application is a revision to the previous MDF Project permit applications and reflects revised PSD applicability calculations for the compounds for which the permit contains PSD avoidance limits.

The particleboard manufacturing operations are not affected by this project.

Because the application results in the PSD Avoidance limitation for PM10/2.5 being less stringent, this application will be processed as a significant modification pursuant to 15A NCAC 02Q .0516.

C. Minor modifications (application nos. 1900015.13A and 1900015.10B)

Application No. 1900015.13A was a minor modification associated with the reconfiguration of some control equipment as the result of a fire. Permit T41 was issued on 04/12/2013 as a result.

Application No. 1900015.10B was a minor modification associated with the following:

1. The replacement of an existing fire pump engine (IDFP-1) with a new 347 HP Unit.
2. The addition of a 1592 HP diesel fuel fired emergency generator
3. The correction of the descriptors for the bag filters ID Nos. CD03 and CD 07

Permit T37 was issued on 05/20/2011 as a result.

The permit shield (15A NCAC 02Q .0512) does not apply to minor modifications. To obtain the permit shield these modifications must be subjected to the public notice and EPA review procedures. These modifications will be done so at this time. The reviews associated with each of these modifications will be included as attachments to this review document.

D.**. Monitoring/Testing Requirements associated with application no. 1900015.12A**

The Permittee submitted application no. 1900015.12A (received 02/01/2012) to address the following (as excerpted from the application):

> This application provides documentation that compliance has been demonstrated for the MDF plant PCWP MACT requirements, MDF Plant PSD Avoidance conditions, the MDF dryer particulate limit under 02D .0515, and the MDF energy system particulate limit under 02D .0504. Special Order of Consent (SOC) No. 2008-002 was issued for the affected units known collectively as the particleboard mill; this application does not address the particleboard mill units.
>
> This permit application includes the following components:
>
> - Performance tests results;
> - MDF Plant control device monitoring parameter ranges for PM, NOx, and HAP, based on performance test results; and
> - The PCWP MACT Notification of Compliance Status (NOCS) report.

The PCWP MACT Notification of Compliance Status (NOCS) report will be addressed in a separate permitting action.

The other aspects of this application will be used to incorporate monitoring parameters for NOx and PM control at the MDF plant.

Active permit	App No.	date	Type	Outcome	Outcome date
T43	15A	03/09/2015	TV-Administrative	T44	05/27/2015
Description					
Arauco is submitting an administrative amendment to revise certain emission factors and monitoring parameters in the permit related to the MDF plant in conditions 2.1.c.1.f and 2.2.B.1. The existing permit explicitly allows these factors to be revised administratively.					

Active permit	App No.	date	Type	Outcome	Outcome date
T44	16A	01/29/2016	Modification-TV-Significant	Active	TBD
Description					

On November 15, 2015, Arauco entered into a Special Order by Consent (SOC) to remove the existing PGT Control devices (CD02-2, CD14-2, CD16-2, and CD-PB- PGT). Alternative control systems have been evaluated and Arauco is submitting this Air Permit Modification Application to install a Biofilter unit at our MDF mill to replace CD02-2, CD14-2, and CD16-2. In accordance with the stipulations of the SOC, we will continue evaluation of control device alternatives for the Particleboard Mill and will submit a permit application for the new control equipment in a timely manner.

In addition to installing the new control device, modifications to the press exhaust gas flows will be made to route emission sources to the new Biofilter and control device re-numbering/naming is requested.

This application is still active. See discussion elsewhere in this review document for full discussion.

IV. Description of Modifications

Task 1 Renewal Application (08D)

Arauco (formerly Uniboard, formerly ATC panels) submitted a complete and timely permit renewal application on November 3, 2008 while operating under permit no. T31. Processing was postponed primarily because it was anticipated that the construction, start up and testing of the "new" MDF plant was going to be done relatively soon thereafter and therefore the PART II applications required could be consolidated and processed with the renewal at one time. In the end however, semi-continual construction and operational issues resulted in successful performance testing (associated with MACT Subpart DDDD) not being completed until the Fall 2011 and Spring 2012.

The renewal application itself did not include any requested changes to the existing Permit T31. However, described in Section III Permitting History changes have occurred at the facility since the renewal application was submitted. Section IV of this review document will address all current requirements applicable to the facility, with reference to the permitting actions as necessary.

Task 2 The Part II application for the Part I applications 1900015.07A, 08C and 09B that addressed the rebuilding and modifications to the MDF plant (application no. 9800015.12B)

Application nos. 1900015.07A, 08C and 09B all dealt with physical changes to the configuration of the rebuilt MDF plant. These applications were all processed as "Step 1" applications in the two step process allowed pursuant to 15A NCAC 02Q .0504 which allows certain significant modifications to obtain permits to construct and operate prior to obtaining a TV permit and subjecting the modification(s) to the public and EPA comment/review periods. The rule requires the Permittee to file a Title V air quality Permit application for such modifications on or before 12 months after commencing operation.

The submittal of application 12B has satisfied this requirement. The draft permit resulting from the current permitting action will be subjected to public and EPA review. Section IV of this review document will address all current requirements applicable to the facility, with reference to these individual permitting actions as necessary.

Task 3 Compliance of the PB plant with MACT DDDD (application no. 9800015.12C)

This application was submitted to address the MACT DDDD Notification of Compliance Status, as specified in 40 CFR §63.9(h)(l)-(6) for the PB plant and as the second step of the significant modification process initiated with the issuance of permit no. T39 (application no.11C). See Task 2 above for an explanation of the two step significant modification permitting procedures pursuant to 15A NCAC 02Q .0504.

Application no. 11C was submitted to address the installation of a wet scrubber to meet the PCWP MACT requirements at the PB plant, per the requirements of Special Order by Consent 2008-002. As discussed in Section III, Permitting History, the facility has recently obtained an SOC (SOC 2015-02, effective 09/03/2015) to dismantle the control system addressed in application nos. 11C and 12C and to evaluate and, eventually, install an alternative control device.

Arauco notified the DAQ via a letter dated 10/23/2015 that the wet scrubber at the PB plant (as well as the MDF plant) was shut down on 09/10/2015. The DAQ issued a NOV on 10/23/2015 for being out of compliance with MACT DDDD and states the "facility will remain in violation of the NESHAP requirements until alternative control systems are installed on all affected emission sources and are certified to comply with the Subpart DDDD standards." The facility is currently evaluating alternatives to the existing wet scrubber technology that was implemented via applications 11C and 12C. Based on the milestones contained in the SOC, the PB plant will have at least 1 year to evaluate the control strategy to be implemented.

Task 4 Compliance of the MDF plant with MACT DDDD (application no. 9800015.12A)
Task 5 Modifications to the MDF plant performed primarily for compliance with MACT DDDD (application no. 9800015.16A).

As stated in Section III, Permitting History, application no. 12A was submitted to demonstrate, with respect to the MDF plant only:

Item 1 - Compliance with 40 CFR 63 Subpart DDDD
Item 2 - Compliance with the existing PSD avoidance condition
Item 3 - Compliance with existing 15A NCAC 02D .0515 condition
Item 4 - Compliance with existing 15A NCAC 02D .0504 condition

Items 2 through 4 were addressed in the issuance of T43. Item 1 was effectively the Notification of Compliance status (NOCS) with respect to MACT subpart DDDD for MDF plant.

Similar to the discussion for Task 3 above, and as discussed in Section III, Permitting History, the facility has recently obtained an SOC (SOC 2015-02, effective 09/03/2015) to dismantle the MACT control system for the MDF plant addressed in application nos. 08C and 12A and to evaluate and, eventually, install an alternative control device.

Arauco notified the DAQ via a letter dated 10/23/2015 that the wet scrubber at the MDF plant (as well as the PB plant) was shut down on 09/10/2015. The DAQ issued a NOV on 10/23/2015 for being out of compliance with MACT DDDD and states the "facility will remain in violation of the NESHAP requirements until alternative control systems are installed on all affected emission sources and are certified to comply with the Subpart DDDD standards." The facility has evaluated alternatives and has submitted application no. 16A to request the following:

As stated in the permit application:

> On November 15, 2015, Arauco entered into a Special Order by Consent (SOC) to remove the existing PGT Control devices (CD02-2, CD14-2, CD16-2, and CD-PB- PGT). Alternative control systems have been evaluated and Arauco is submitting this Air Permit Modification Application to install a Biofilter unit at our MDF mill to replace CD02-2, CD14-2, and CD16-2. In accordance with the stipulations of the SOC, we will continue evaluation of control device alternatives for the Particleboard Mill and will submit a permit application for the new control equipment in a timely manner.
>
> In addition to installing the new control device, modifications to the press exhaust gas flows will be made to route the exhaust of CD 16 to a mixing chamber which is routed to either the dryers or the combustion zone of the energy system. Control device re- numbering/naming is requested.

This modification has implications with the following regulations:

15A NCAC 02D .1111 MAXIMUM ACHIEVEABLE CONTROL TECHNOLOGY (40 CFR 63 Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products)

This regulation is the driver for the change in control strategy. With the possible exception of the PSD avoidance condition discussed below, this control device is being installed only to comply with MACT DDDD. Biofilters are now relatively commonplace in the wood products industry used for MACT DDDD compliance. The Permittee evaluated installations at other facilities and decided that such a system could be implemented at the MDF plant.

40 CFR 63.2240(B) addresses Compliance options for add-on control systems. 63.2240 references MACT DDDD table 1B which provide the following options:

For each of the following process units. . .	You must comply with one of the following six compliance options by using an emissions control system.
• Fiberboard mat dryer heated zones (at new affected sources only); • green rotary dryers; • hardboard ovens; • press predryers (at new affected sources only); • pressurized refiners; primary tube dryers; secondary tube dryers; • reconstituted wood product board coolers (at new affected sources only); • reconstituted wood product presses; • softwood veneer dryer heated zones; rotary strand dryers; • conveyor strand dryer zone one (at existing affected sources); • and conveyor strand dryer zones one and two (at new affected sources)	(1) Reduce emissions of total HAP, measured as THC (as carbon)[a], by 90 percent; or (2) Limit emissions of total HAP, measured as THC (as carbon)[a], to 20 ppmvd; or (3) Reduce methanol emissions by 90 percent; or (4) Limit methanol emissions to less than or equal to 1 ppmvd if uncontrolled methanol emissions entering the control device are greater than or equal to 10 ppmvd; or (5) Reduce formaldehyde emissions by 90 percent; or (6) Limit formaldehyde emissions to less than or equal to 1 ppmvd if uncontrolled formaldehyde emissions entering the control device are greater than or equal to 10 ppmvd.

The Permittee estimates that the biofilter will provide at least 90% control on formaldehyde and methanol and 50% on total VOCs based on vendor guarantees. Note that the Permittee only need to demonstrate compliance via one of the options above. Thus, it is expected the demonstration will be made on either formaldehyde or methanol but not total VOC. It is noted however that the biofilter will also be used to meet the 15A NCAC 02Q .0317 PSD Avoidance VOC limit. See 15A NCAC 02Q .0317 discussion below.

The facility is currently permitted to control the board cooler and press emissions by the PGT systems. The emissions from both the press and board cooler will be routed to a mixing chamber that will be directed to the combustion zone of the energy system (ES-02-A) which are eventually exhausted to the dryer and then ultimately through the venturi scrubbers and the new biofilter system.

Performance testing will be required and biofilter monitoring parameters will be derived based on the parameters used during the performance testing.

15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION

The modification, which consist of rerouting gas flows and removing the PGT systems and installing a biofilter in their place, will not involve an increase in production and hence no increase in emission rates. The biofilter will be used to control HAP and total VOC. Only total VOC is regulated under PSD. Based on the information supplied it is expected that the biofilter will have comparable or better total VOC removal efficiency than the existing PGT systems and no significant VOC emissions increase is expected. Thus, this modification does not trigger a PSD review.

15A NCAC 02Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION

The current permit contains an existing PSD avoidance condition for PM10, PM2.5, VOC and NOx. This modification is not expected to result in a change in any PM or NOx emissions. The total VOC emissions however could be impacted. The permit contains VOC emission factors that are used to estimate emissions. The revised permit will require testing of the biofilter in various operating scenarios (e.g. normal operation, control device maintenance downtime (CDME) allowed under MACT DDDD) to determine the appropriate emission factors to use in the future. The permit condition will also be revised to allow any subsequent testing, upon approval by the DAQ, to be used to derive emission factors for purposes of compliance of this rule without having to modify the permit.

STATE ENFORCEABLE ONLY
15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

All sources affected by this modification are controlled by the biofilter and are subject to MACT Subpart DDDD. Pursuant to 15A NCAC 02Q 0702(a)(27) MACT affected sources are not required to have a permit to emit toxic air pollutants.

However pursuant to NCGS 143-215.107(a)(5)(b):

> *Upon receipt of a permit application for a new source or facility, or for the modification of an existing source or facility, that would result in an increase in the emission of toxic air pollutants, the Department shall review the application to determine if the emission of toxic air pollutants from the source or facility would present an unacceptable risk to human health. …*

In practice an unacceptable risk to human health exists when the emissions of any TAP exceeds its respective Acceptable Ambient Level (AAL). NCGS 143-215.107(a)(5)(b) also states:

Upon making a written finding that a source or facility presents or would present an unacceptable risk to human health, the Department shall require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling, epidemiological studies, actual monitoring data, or other information that indicates an unacceptable health risk. When the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

The net result of the regulation and the law is that the MACT /GACT source is not exempted from 02D .1100 until the DAQ determines it does not pose an *unacceptable health risk.* The implications of this will be discussed elsewhere in this review document.

V. Regulatory Review

A. The following material handling sources:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
7001 or SP-1	Truck/Rail Chip Handling System, Enclosed	N/A	N/A
7004 or SP-2	Truck/Rail Sawdust Handling System, Enclosed	N/A	N/A
7010	Particle Board Mill Truck Dump	N/A	N/A
7012, 7014, 7015, 7029	Dump bunkers and CL dryer dump	N/A	N/A
7052, 7054, 7055, 7056	Wood residue bunkers	N/A	N/A
6001, 7002-A, 7002-B, 7002-C, 7002-D	Wood chip piles - Medium Density Fiberboard Mill	N/A	N/A
6003, 7006, 7007, 7022	Wood Fuel Pad and Boiler Transfers	N/A	N/A
7005-D, 7005-E, 7005-F, 7005-G	Sawdust transport to A-frame	N/A	N/A
7025	Scale transfer conveyors	N/A	N/A
7019, 7026	Fiber dump and reject filter bins	N/A	N/A
7027	Hog fuel hopper	N/A	N/A
7040, 7044, 7046, 7048, 7050	Particleboard Mill chip transfer	N/A	N/A
SP	Fuel Sawdust and Chip Storage Piles	N/A	N/A
7024	Particleboard Mill feed bins	N/A	N/A

These sources in the table above are material storage and handling sources that have fugitive air emissions.

The following table provides a summary of limits and/or standards for the material handling sources.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Visible emissions	20 percent opacity	15A NCAC 02D .0521(d)
Odors	**State- Enforceable Only** Odorous emissions must be controlled - See Section 2.2. A.3;	15A NCAC 02D .1806
Particulate Matter	**State- Enforceable Only** The Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary	15A NCAC 02D .0540
HAP	No applicable requirements	15A NCAC 02D .1111

15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

The sources consist of material handling of wood in the sawdust, wood chips, and/or woodwaste form. PM emissions such that opacity would be created, are unlikely. Thus, no M/R/R are required in the current permit. The revised permit will contain no substantive changes to the existing M/R/R requirements.

STATE ENFORCEABLE ONLY
15A NCAC 02D .0540 "Particulates from Fugitive Dust Emission Sources

The requirements of this regulation will be discussed in the facility-wide regulatory consideration section of this review document.

STATE ENFORCEABLE ONLY
15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS
The requirements of this regulation will be discussed in the facility-wide regulatory consideration section of this review document.

15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY
(40 CFR 63, Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products)

Pursuant to 40 CFR 63.2232, these material handling operations are affected sources under this rule but have no applicable requirements. Pursuant to current DAQ policy, such sources are indicated as such in the equipment list (Section 1 of the air permit) with "MACT DDDD." No further review is necessary.

B. Medium Density Fiberboard Facilities woodworking operations as presented in Table 2.1.B.1.

Table 2.1.B.1

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-03	Fiber Sifter System	CD03	Fabric Filter (12,290 square feet of filter area)
ES-04	Forming Line Clean-Up System	CD04	Fabric Filter (9,346 square feet of filter area)
ES-05	Mat Reject System	CD05	Fabric Filter (9,346 square feet of filter area)
ES-07	Saw System	CD07	Fabric Filter (6,793 square feet of filter area)
ES-08	Sander System No. 1	CD08	Fabric Filter (12,290 square feet of filter area)
ES-09	Recycled Fiber Silo No. 1	CD09	Bin Vent Filter (226 square feet of filter area)
ES-10	Sander System No. 2	CD10	Fabric Filter (12,290 square feet of filter area)
ES-12	Sander Dust Silo No. 1	CD12	Bin Vent Filter (226 square feet of filter area)
ES-13	Dry Sawdust Silo	CD13	Bin Vent Filter (226 square feet of filter area)
ES-15	Recycled Fiber Silo No. 2	CD15	Bin Vent Filter (226 square feet of filter area)
ES-17	Sander Dust Silo No. 2	CD17	Bin Vent Filter (226 square feet of filter area)

These material handling operations are all controlled with filtration systems and are associated with the MDF plant. They emit primarily PM emissions.

The following table provides a summary of limits and/or standards for the woodworking operations in Table 2.1.B.1.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	adequate duct work and properly designed collectors	15A NCAC 02D .0512
Visible emissions	20 percent opacity	15A NCAC 02D .0521
Volatile organic compounds	Work Practice Standards See Section 2.2 A.1.	15A NCAC 02D .0958
Toxic air pollutants	See Section 2.2 A.2; **State-enforceable only**	15A NCAC 02D .1100
Odors	See Section 2.2 A.3; **State-enforceable only**	15A NCAC 02D .1806
Hazardous air pollutants	National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products See Section 2.2 A.4.	15A NCAC 02D .1111 (40 CFR 63, Subpart DDDD)
Volatile organic compounds, Nitrogen oxides, $PM_{2.5}$, PM_{10}	See Section 2.2 B.1.	15A NCAC 02Q .0317 (PSD Avoidance)

15A NCAC 02D .0512: PARTICULATES FROM WOOD PRODUCTS FINISHING PLANTS
This rule requires properly designed collectors for the control of PM emissions. Based on the lack of complaints or compliance issues associated with these sources, these sources appear to have properly designed collectors. The current permit contains the standard M/R/R requirements for filtration controlled PM emission sources. No substantive changes will be made to the existing permit condition.

15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS
This rules requires visible emission to be less than 20% opacity. These sources have no documented violations based on a review of the inspection reports. No substantive changes will be made to the existing permit condition.

15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY
(40 CFR 63, Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products)

Pursuant to 40 CFR 63.2232, these material handling operations are affected sources under this rule but have no applicable requirements. Pursuant to current DAQ policy, such sources are indicated as such in the equipment list (Section 1 of the air permit) with "MACT DDDD." No further review is necessary.

15A NCAC 02Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION
15A NCAC 02D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS
15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING [40 CFR 64]
STATE ENFORCEABLE ONLY - 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

The requirements of these regulations will be discussed in the facility-wide regulatory considerations section of this review document.

C. Medium Density Fiberboard Facilities Operations as presented in Table 2.1.C.1.

Table 2.1.C.1.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission point
ES-01	Refiner	CD01	Refiner Abort Cyclone (66 inches in diameter) [12]	EP01
		CD02-1 in series with CD02-2	Venturi scrubber Packed bed scrubber	EP02
		CD14-1 In series with CD14-2	Venturi scrubber Packed bed scrubber	EP14
ES-02-A	Energy System consisting of a dry/wet wood/woodwaste-fired burner (205 million Btu per hour heat input)	CD02-A	Urea/water injection system	EP02/EP14
		CD02-1 In series with CD02-2	Venturi scrubber Packed bed scrubber	EP02
		CD14-1 In series with CD14-2	Venturi scrubber Packed bed scrubber	EP14
ES-02-B ES-02-C and ES-02-D ES-06-B	Two Stage Dryer System Two backup natural gas-fired dryer burners (78.5 and 17 million Btu per hour heat input respectively) MDF Board Cooler	CD02-1 In series with CD02-2	Venturi scrubber Packed bed scrubber w	EP02
		CD14-1 In series with CD14-2	Venturi scrubber Packed bed scrubber	EP14
ES-16	MDF Press	CD16-1 In series with CD16-2	Venturi scrubber Packed bed scrubber	EP16

A brief permitting history is provided here given the major changes that have occurred for the MDF operation since the last permit renewal. Only the permitting actions that resulted in substantial changes to the MDF operations are presented here. All changes addressed as permitting actions are presented in the Chronology section of this review document.

While operating under permit no. T31, Arauco, then named ATC Panels (ATC), was permitted to operate a particleboard (PB) plant and a medium density fiberboard (MDF) plant. ATC completely dismantled the MDF plant and submitted permit application no. **07A** to completely rebuild it.

The resulting **permit no T32, issued May 7, 2008** contained:

- a PSD avoidance condition for the MDF plant with required testing to verify emission factors used in the application's PSD avoidance analysis as well as for ongoing emissions estimation.

[2] For operation during startup, shutdown and malfunction only.

- a MACT Subpart DDDD permit condition, requiring compliance upon startup or October 1, 2008 which ever was later. The Permittee was also required to submit an application by October 1, 2008 to put enforceable conditions in the air permit at which time the MACT compliance options would be examined in detail.
- Since the modification was a significant modification processed pursuant to 15A NCAC 02Q .0501(c)(2), a requirement to submit a TV permit application on or before 12 months after commencing operation of the MDF plant pursuant to 15A NCAC 02Q .0501(c)(2) and 02Q .0504.

On August 1, 2008, ATC Panels submitted a permit application to change its name and ownership to Uniboard USA LLC (Uniboard). Permit no. T33 was issued November 25, 2008.

On October 23, 2008, Uniboard submitted a permit application (no. 1900015.08C) to modify the permitted, but still not constructed, MDF plant. Uniboard requested to transfer existing equipment from a facility in Canada and new emission control equipment. The process had been significantly reconfigured, including the replacement of the RTO with a biofilter and wet scrubber system. Permit no. T34 was issued on April 22, 2009. Since the modification was a significant modification processed pursuant to 15A NCAC 02Q .0501(c)(2), a requirement to submit a TV permit application on or before 12 months after commencing operation of the MDF plant pursuant to 15A NCAC 02Q .0501(c)(2) and 02Q .0504 was placed into the permit.

On July 24, 2009 UNIBOARD submitted a permit application (no. 1900015.09B) to revise the still unconstructed MDF plant by replacing the biofilter with another scrubber and make some other equipment changes. Permit No. T35 was issued on October 15, 2009.

The heat energy system located at the MDF plant burns biomass (both clean wood and resinated wood) to supply heat to the 2-stage dryer system and heats thermal oil for use at the press and for generating steam for the refiner. A urea/water solution is injected into the flue gas of the energy plant to provide NOx emissions control. The combustion gases from the energy system exhausts into the dryers during normal operation and is then routed to the emission control systems.

As described in Section IV of this review regarding Task 5, the Permittee has stopped operation of the PGT systems installed on the MDF plant and has submitted a permit application route the emissions of the press to the energy system. By doing so, the Permittee to will be able to control all major HAP emitting sources at the MDF plant with a single biofilter system. Table. 2.1.C (as will the equipment list in Section 1 of the permit) will be revised to read as follows:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point*
ES-01	Refiner	CD01	Refiner Abort Cyclone (66 inches in diameter) [22]	EP01
		CD02 in series with CD18	Venturi scrubber Biofilter	EP02 / EP18
		CD14 In series with CD18	Venturi scrubber Biofilter	EP14/ EP18
ES-02-A	Energy System consisting of a dry/wet wood/woodwaste-fired burner (205 million Btu per hour heat input)	CD02-A	Urea/water injection system	EP02 / EP14 / EP18
		CD02 In series with CD18	Venturi scrubber Biofilter	EP02 / EP18

[2] For operation during startup, shutdown and malfunction only.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description	Emission Point*
		CD14 In series with CD18	Venturi scrubber Biofilter	EP14 / EP18
ES-02-B ES-02-C and ES-02-D ES-06-B	Two Stage Dryer System Two backup natural gas-fired dryer burners (78.5 and 17 million Btu per hour heat input respectively) MDF Board Cooler and Press Hall	CD02 In series with CD18	Venturi scrubber Biofilter	EP02 / EP18
		CD14 In series with CD18	Venturi scrubber Biofilter	EP14 /EP18
ES-16	MDF Press	CD02 In series with CD18	Venturi scrubber Biofilter	EP02 / EP18
		CD14 In series with CD18	Venturi scrubber Biofilter	EP14 /EP18

*Emission Points EP02 and EP14 will exhaust to the inlet of the biofilter (CD18) once installed.

The following table provides a summary of limits and/or standards for the operations in Table 2.1.C.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	$E = 4.10P^{0.67}$ or $E = 55.0(P)^{0.11} - 40$ where; E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 02D .0516
Visible emissions	20 percent opacity	15A NCAC 02D .0521
Volatile organic compounds	Work Practice Standards See Section 2.2 A.1.	15A NCAC 02D .0958
Toxic air pollutants	See Section 2.2 A.2; **State-enforceable only**	15A NCAC 02D .1100
Odors	See Section 2.2 A.3; **State-enforceable only**	15A NCAC 02D .1806
Hazardous air pollutants	National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products See Section 2.2 A.4.	15A NCAC 02D .1111 (40 CFR 63, Subpart DDDD)
Volatile organic compounds, Nitrogen oxides, $PM_{2.5}$, PM_{10}	See Section 2.2 B.1.	15A NCAC 02Q .0317 (PSD Avoidance)

15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

The applicability of this regulation to the combined emissions of the energy system and the dryers was thoroughly addressed in the review document for permit no. T43. The venturi scrubber monitoring parameters were modified in permit no. T44 based on source testing conducted on November. 4, 2014 which was subsequently approved by the DAQ and demonstrated compliance with this regulation.

The current permit allows the monitoring parameters included in condition f. to be revised administratively pending DAQ review. The DAQ has found this to be inconsistent with 15A NCAC 02Q .0514 Administrative Permit Amendments. The condition of concern reads as follows:

f. The Permittee shall install, operate, and maintain instrumentation on the venturi scrubbers (ID Nos. CD02-1, CD14-1 and CD16-1) to continuously monitor the following parameters and maintain the parameters in the associated operating ranges (These parameters may be revised administratively pending DAQ review):

Parameter	Control Device ID No.	Operating range, per control device
Pressure drop (inches of water gauge, 3-hour block average)	CD02-1	6.5
	CD14-1	6.5
	CD16-1	5.5
Recirculating liquid flow rate (gallons per minute, 3-hour block average)	CD02-1	378
	CD14-1	416
	CD16-1	353.5

Paragraph f. will be revised to read

f. The Permittee shall install, operate, and maintain instrumentation on the scrubbers identified in Table 2.1.C. to continuously monitor the parameters in Table 2.1.C.1.f. and maintain the parameters in the associated operating ranges. If the Permittee revaluates compliance with the emission limit in condition a. at parameter ranges outside of those in Table 2.1.C.1.f. below, the Permittee shall, upon approval by the DAQ, attach the approval memo containing the revised operating parameters to this permit and maintain the parameters in the associated operating ranges contained therein.

15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

This rule requires that emissions of sulfur dioxide from Energy System (**ID No. ES-02-A**) shall not exceed 2.3 pounds per million Btu heat input

Woodwaste typically has a low sulfur content, well below concentrations that would result in emissions approaching 2.3 pounds per million Btu heat input. Thus, no M/R/R are required in the current permit. No substantive changes will be made to the existing permit condition.

15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Visible emissions from this source shall not be more than 20 percent opacity when averaged over a six-minute period. The permit requires once per week visible emission (VE) readings and associated recordkeeping and reporting. The revised permit will contain no substantive changes to the existing M/R/R requirements.

<u>STATE ENFORCEABLE ONLY</u> - 15A NCAC 02D .1100 TOXIC AIR POLLUTANTS
15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY
15A NCAC 02Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION
15A NCAC 02D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS

STATE ENFORCEABLE ONLY - 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

The requirements of these regulations will be discussed in the facility-wide regulatory consideration section of this review document.

D. The following sources for the Medium Density Fiberboard Facilities

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-18, ES-19, and ES-20 **NSPS Dc Case-by-Case MACT**	Three natural gas-fired hot oil heaters (24 million Btu per hour maximum heat input each)	NA	NA

These heaters serve as backup units to replace or augment the heat supplied by the energy system. These heaters are indirect heat exchangers with emissions that are uncontrolled.

The following table provides a summary of limits and/or standards for the emission sources above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.35 pounds per million Btu heat input	15A NCAC 02D .0503
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 02D .0516
Visible emissions	20 percent opacity	15A NCAC 02D .0521
NA	Notification and Recordkeeping	15A NCAC 02D .0524 (NSPS Subpart Dc)
Toxic air pollutants	See Section 2.2 A.2; **State-enforceable only**	15A NCAC 02D .1100
HAPs	Best Combustion Practices	15A NCAC 02D .1109
HAPs	One time initial energy assessment Annual tune ups **Compliance date: May 20, 2019**	15A NCAC 02D .1111
Volatile organic compounds	Work Practice Standards See Section 2.2 A.1.	15A NCAC 02D .0958
Odors	See Section 2.2 A.3; **State-enforceable only**	15A NCAC 02D .1806
Volatile organic compounds, Nitrogen oxides, $PM_{2.5}$, PM_{10}	See Section 2.2 B.1.	15A NCAC 02Q .0317 (PSD Avoidance)

15A NCAC 02D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS
15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES
15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS
As natural gas fired indirect heat exchangers, the visible, PM and SO2 emissions are minimal. As such, no M/R/R applies for the above regulations, pursuant to current DAQ policy. No other substantive changes will be made to the existing permit conditions.

15A NCAC 02D .0524 NEW SOURCE PERFORMANCE STANDARDS - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"

Given the low heat input values, these heaters only have notification and recordkeeping requirements. The startup notification requirements have been met. This requirement will be removed from the revised permit condition. No other substantive changes will be made to the existing permit condition.

STATE ENFORCEABLE ONLY - 15A NCAC 02D .1100 TOXIC AIR POLLUTANTS
15A NCAC 02Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION
15A NCAC 02D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS
STATE ENFORCEABLE ONLY - 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

The requirements of these regulations will be discussed in the facility-wide regulatory consideration section of this review document.

15A NCAC 02D .1109: CAA 112(j); CASE-BY-CASE MACT FOR BOILERS AND PROCESS HEATERS

The permit condition addressing this rule was placed into the permit since the last permit renewal (Permit No. T36). It was processed as a significant modification and was subject to the public and EPA review. This condition requires best combustion practices that include an annual tune up and boiler inspection as well as vendor recommended maintenance.

With the promulgation of 40 CFR 63 Subpart DDDDD (MACT 5D), "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters," the applicability of the CAA §112(j) requirements will sunset and then the Permittee will have to comply with the CAA §112(d) standard, MACT 5D, pursuant to 40 CFR 63.56(b).

§63.56(b) requires (paraphrased):
- the permitting authority to incorporate requirements of that standard in the title V permit upon its next renewal
- establish a compliance date that assures the Permittee must comply with the promulgated standard within a reasonable time, but not longer than 8 years after the standard is promulgated or the Permittee was first required to comply with the case-by-case standard, whichever is less

Since this is the "next renewal" after the promulgation, the MACT 5D requirements will be incorporated into the revised permit. The MACT 5 D requirements will be discussed elsewhere in this review document.

The effective date of the MACT 5D was May 20, 2011 (76 FR 15662). The DAQ has interpreted the promulgation date under §63.56(b) to be the effective date of the rule. The Permittee was not required to comply with the case-by-case standard until October 8, 2013. Thus, the 8 years after date of promulgation is the appropriate date to choose for the MACT 5D compliance date. Consistent with §63.56(b), the Permittee will be required to comply with MACT 5D on May 20, 2019 (eight calendar years, including 2 leap years after May 20, 2011). As such the following language will be added to the permit:

> *"The Permittee shall comply with this CAA §112(j) standard until May 19, 2019. The initial compliance date for the applicable CAA §112(d) standard for ''National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters" is May 20, 2019 as specified in condition XYZ below."*

Other than inclusion the above sunset statement, the revised permit will contain no substantive changes to the existing requirements under 02D .1109.

15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

As discussed above, starting on May 20, 2019, these sources will become subject to 40 CFR 63, Subpart DDDDD, "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters" (MACT 5D).

Under MACT 5D, the hot oil heaters can be considered "units designed to burn gas 1 fuels" pursuant to 40 CFR 63. 7499(l) as defined in §63.7575. As such, the units (existing units larger than 10 mmBtu/hr each) will be subject to annual tune ups, a one-time energy assessment and associated recordkeeping and reporting. The initial tune ups and the one time energy assessment must be completed by the compliance date of May 20, 2019. See discussion under **15A NCAC 02D .1109: CAA 112(j); CASE-BY-CASE MACT FOR BOILERS AND PROCESS HEATERS** above for this compliance date determination.

A condition with all applicable requirements will be added to the permit.

E. The following Particleboard Mill operations:

Table 2.1.E.1

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
Particleboard Mill Combustion Sources and Dryers			
1430	Surface layer triple pass, rotary drum (#3) dryer with one wood suspension dust/natural gas-fired burner (60 million Btu per hour maximum rated heat input)	CD-1431	High efficiency multi-cyclone with 2 tubes, each 132 inches in diameter
		CD-PB-WESP	Wet electrostatic precipitator
		CD-PB-PGT	Packed bed scrubber with photochemical gas treatment
1420	Core layer single pass, rotary drum (#1) dryer with one wood suspension dust/natural gas-fired burner (50 million Btu per hour maximum rated heat input)	CD-1421	High efficiency multi-cyclone with 4 tubes, each 80 inches in diameter
		CD-PB-WESP	Wet electrostatic precipitator
		CD-PB-PGT	Packed bed scrubber with photochemical gas treatment
1410	Core layer single pass, rotary drum (#2) dryer with one wood suspension dust/natural gas-fired burner (50 million Btu per hour maximum rated heat input)	CD-1411	High efficiency multi-cyclone with 4 tubes, each 80 inches in diameter
		CD-PB-WESP	Wet electrostatic precipitator
		CD-PB-PGT	Packed bed scrubber with photochemical gas treatment
3201	<u>Operating Scenario 1</u> One "Wellons" unit operating as a: a) wood suspension dust -fired burner (40 million Btu per hour maximum rated heat input); or a b) natural gas-fired burner (21.8 million Btu per hour maximum rated heat input); exhausting to either surface layer triple pass, rotary drum (#3) dryer [ID No. 1430] and/or core layer single pass, rotary drum (#1) dryer [ID No. 1420] and/or core layer single pass, rotary drum (#2) dryer [ID No. 1410]	CD-1431 AND/OR CD-1421 AND/OR CD-1411, AND CD-PB-WESP CD-PB-PGT	High efficiency multi-cyclone with 2 tubes, each 132 inches in diameter High efficiency multi-cyclone with 4 tubes, each 80 inches in diameter High efficiency multi-cyclone with 4 tubes, each 80 inches in diameter Wet electrostatic precipitator Packed bed scrubber with photochemical gas treatment

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
3201	Operating Scenario 2 One "Wellons" unit operating as a: c) natural gas -fired indirect heat exchanger (21.8 million Btu per hour maximum rated heat input)	NA	NA

Table 2.1.E.2

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
Particleboard Mill Other Operations			
3501	Sawdust Rock and Metal Separator	CD-SC CD-3501	High efficiency cyclone - 72 inches in diameter Reverse flow bag filter with 2,410 square feet of surface area
3515	Surface Material Transport (SL fines from screening operation)	CD-3500, CD-3525 CD-3512B, CD-3515	Simple cyclone - 72 inches in diameter Reverse flow fabric filter with 6,918 square feet of surface area in parallel with Simple cyclone - 72 inches in diameter Reverse flow fabric filter with 5,767 square feet of surface area
3525	Surface Formers and Mat Dumps	CD-3520A, CD-3520B, CD-3521 CD-3525	Three (3) simple cyclones - each 96 inches in diameter Reverse flow fabric filter with 6,918 square feet of surface area
3535	Flying Cut Off Saw, Pretrim Saws, & Production Collection	CD-3530 CD-3531 CD-3533 CD-3535	Simple cyclone - 84 inches in diameter Simple cyclone - 108 inches in diameter Simple cyclone - 108 inches in diameter Reverse flow fabric filter with 6,918 square feet of filter area
3545	Particleboard Mill Steinemann Finishing Sander	CD-2006, CD-3570, CD-3575	Reverse flow bag filter with 6,918 square feet of surface area in series with High efficiency cyclone - 144 inches in diameter in series with Reverse flow bag filter with 1,159 square feet of surface area
DEF- 2010	Particleboard Press	CD-PB-PGT	Packed bed scrubber with photochemical gas treatment
PB-BC	Particleboard Cooler	None	None
3565	Particleboard Mill Steinemann Calibrating Sander	CD-5001, CD-3570, CD-3575	Reverse flow fabric filter with 6,918 square feet of surface area in series with High efficiency cyclone - 144 inches in diameter in series with Reverse flow bag filter with 1,159 square feet of surface area

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
3555	Schelling Saw Board Trim	CD-3522, CD-4005	High efficiency cyclone - 120 inches in diameter Reverse flow bag filter with 6,918 square feet of surface area
3575	Sander Filter Transport for Filters 3545 & 3565	CD-3570, CD-3575	High efficiency cyclone - 144 inches in diameter Reverse flow bag filter with 1,159 square feet of surface area
3585	PZKR Green Chip Flakers	CD-3585	Reverse flow bag filter with 4,880 square feet of surface area
3595	Oversize Material Pallmann Mill	CD-3595	Reverse flow bagfilter (Maximum air-to-cloth ratio of 3.0 ACFM/total filter surface area).
3577	Dry waste transport system	CD-3532, CD-3577	Simple cyclone - 60 inches in diameter Reverse flow bag filter with 4,068 square feet of surface area

15A NCAC 02D .0504: PARTICULATES FROM WOODBURNING INDIRECT HEAT EXCHANGERS
This regulation requires the Wellons burner (ID No. 3201) when combusting wood to emit no more than 0.365 pounds of PM per million Btu heat input. At 40 mmBtu/hr (maximum permitted heat input) this is equivalent to 14.6 lb/hr. However, its emissions are exhausted to the dryers which have PSD BACT PM10 limits of 28.3 lb/hr. The dryers and the Wellons are ultimately controlled by a wet ESP. These sources were last source tested on 10/22/2009 and had a total PM emission rate of 8.89 lb/hr. Even with the contribution of the PM emissions from the dryers the total emission rate is less than that allowed by this regulation. The current condition requires compliance with the M/R/R of the PSD condition to ensure compliance with 02D .0504.

Review of the rule language states:

(d) This Rule applies to installations in which wood is burned for the primary purpose of producing heat or power by indirect heat transfer.

In this situation, wood is primarily burned to provide direct heat for the dryers. Thus, this condition will be removed from the permit.

15A NCAC 02D .0512: PARTICULATES FROM WOOD PRODUCTS FINISHING PLANTS
This regulation requires adequate duct work and properly designed collectors for PM. All of the sources in Table E.2 utilize cyclone and bagfilter systems for material handling and PM control, which are typical controls for these wood working material handling operations. The permit requires the typical and standard DAQ inspection, maintenance recordkeeping and reporting requirements. No substantive changes will be made to the existing permit condition.

15A NCAC 02D .0515: PARTICULATE EMISSIONS FROM MISCELLANEOUS INDUSTRIAL PROCESSES
This regulation subjects the commingled emissions of the Wellons burner and the direct-heated dryers to an emission limitation based on process rate. These sources were last source tested on 10/22/2009. During the test, the lowest throughput of material passing through these two dryers was 97,350 lb/hr (based on a review of the most recent inspection report). Using this lower throughput rate ensures the lowest calculated particulate limit. Using the applicable formula associated with the regulation, the calculated particulate limit for this unit is 74 lb/hr. The performance results from the October 22, 2009 test indicated that the particulate emission rate for the combined dryer exhaust stack was 8.89 lb/hr. This emission rate is well below the 15A NCAC 02D .0515 particulate emissions standard. Since it is expected that the majority of the PM will be PM10 after the controls, the M/R/R for the PM10 BACT limit of 28.3 lb/hr is used for this regulation as well. No substantive changes will be made to the existing permit condition.

15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES
Sulfur dioxide from the wood and natural gas-fired dryers and Wellons burner shall not exceed 2.3 pounds per million Btu heat input. Wood and natural gas have sulfur content well below the amount required to exceed this emission limitation. No M/R/R is required. No substantive changes will be made to the existing permit condition.

15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS
All sources at the particleboard mill are subject to a 20% opacity limitation (6- minute averages with some exceptions).
The permit requires weekly visible emissions (VE) readings and associated recordkeeping and report. No substantive changes will be made to the existing permit condition

15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION
All aspects of the PB mill are subject to BACT limits for PM10, VOC and opacity as well as NOx for the combustion sources. The permit requires M/R/R that was incorporated into the permit through the PSD and TV permitting process. The existing condition contains a lot of redundancy. Thus the permit condition will be streamlined by combining similar or identical requirements into a single statement as necessary. No substantive changes will be made to the existing permit condition as a result of this streamlining except as follows:

PM10 testing

The current permit requires at 2.1.6.c. (paraphrased):

> * * * , the Permittee shall demonstrate compliance with the emission limits in condition a. above by testing the particleboard dryers **(ID Nos. 1410, 1420, and 1430)** for PM_{10} (filterable and condensable both) in accordance with a testing protocol approved by the DAQ. * * * . All three dryers shall be in operation during this source testing.
>
> Testing shall be completed and the results submitted within 180 days from the issuance date of air permit 03449T31. All three dryers or all operational dryers shall be included in this source testing.
>
> The Permittee shall conduct another stack test and submit the results within 90 days of start-up of particleboard dryer **(ID No. 1410)**, if this dryer was not operational during the stack test as required above. All three dryers shall be in operation during this source testing.

Permit No. T31 was issued July 12, 2007. The first documented source test after the permit issuance of permit no. T31 was the testing conducted on October, 22, 2009 (the Permittee received a Notice of Violation (NOV) for missing the test date requirement). The approved emission rate for total PM was 8.89 lb/hr which is well below the PM10 BACT limit of 28.3 lb/hr. Only two dryers were tested at that time. Dryer 1410 has not been operated since the issuance of permit no. T31. The testing condition will be revised to reflect the 2009 testing and the need for a test when the dryer 140 becomes operational.

CO, VOC NOx Testing

The current permit requires at 2.1.6 p., v., and aa., (paraphrased):

> Under the provisions of NCGS 143-215.108, the Permittee shall demonstrate compliance with the emission limits in condition a. above by testing the particleboard dryers (ID Nos. 1410, 1420, and 1430) for **CO, VOC NOx** in accordance with a testing protocol approved by the DAQ. Details of the emissions testing and reporting requirements can be found in Section 3 - General Condition JJ of the permit.
> All three dryers shall be in operation during this source testing.

Testing shall be completed and the results submitted within 90 days of start-up of particleboard dryer **(ID** No.**1410).**

Note that this condition appears to not require "All three dryers or all operational dryers" but rather all three dryers. It is highly likely that this was a typographical error and not on purpose given the context of the testing. In any case, the Permittee conducted source tests for these pollutants concurrently with the PM testing conducted on October 22, 2009 discussed above. Compliance with all BACT limits was demonstrated. The testing requirement to test within 90 days of start-up of particleboard dryer (ID No.1410) will remain in the permit.

VOC monitoring permit application requirement

The current permit requires at 2.1.6 x:

> During the stack test for VOC as required in Section 2.1 E.6.v. above, the Permittee shall collect data for water injection rates for wet ESP and establish minimum water injection rate to assure compliance with the VOC emission limit in condition a. above. The Permittee shall request a permit revision to include the minimum water injection rate for wet ESP established in Section 2.1 E.6.x. through an "administrative permit amendments" procedure within 90 days from the submittal of stack test results in Section 2.1 E.6.v. above.

The Permittee has not submitted a permit application because a strict reading of the language suggested that the test has not yet been required. This point is beyond the scope of this regulatory review. However, the water injection rate was monitored. The rates used during the test will be placed into the permit as the required minimum injection rates. A 3-hour block average will be used since compliance with the emission limits was based on three 1-hour sampling runs.

Revising monitoring parameters
To allow the Permittee to revise the monitoring parameters associated with the WESP without submitting a permit modification, the following language will be added to the permit.

iv. If the Permittee revaluates compliance with the emission limit in condition a. at parameter ranges outside of those in Table 2.1.E.6.f., the Permittee shall, upon approval by the DAQ, attach the approval memo containing the revised operating parameters to this permit and maintain the parameters in the associated operating ranges contained therein.

In this way, the Permittee, if it conducts a compliance test outside the monitoring parameter ranges of the permit, it can immediately operate at the new parameter ranges once the test report has been reviewed by the DAQ and the Permittee has received written approval from the DAQ.

- **STATE ENFORCEABLE ONLY - 15A NCAC 02D .1100 TOXIC AIR POLLUTANTS**
- **15A NCAC 02Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION**
- **15A NCAC 02D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS**
- **STATE ENFORCEABLE ONLY - 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS**

The requirements of these regulations will be discussed in the facility-wide regulatory consideration section of this review document.

F. Laminating Mill:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
Laminator Mill			
3593 and 3594	Two (2) Short Cycle Laminating Presses	CD-3593	Reverse flow bagfilter (Maximum air-to-cloth ratio of 4.1 ACFM/total filter surface area).
Pr-Heat1	Natural gas or No. 2 fuel oil-fired hot oil heater (4.7 million Btu per hour heat input) used with short cycle laminating presses	N/A	None

The board laminating press takes resin-impregnated papers and bonds (presses) them to either particleboard or MDF boards. The press includes a natural gas/No. 2 fuel oil fired thermal oil heater. Emissions from this operation include uncontrolled VOC and HAPs that are released during pressing (heating,), particulates from sweeping and trimming activities which are controlled by a bagfilter, and the uncontrolled emissions from the firing of natural gas and No. 2 fuel oil in the thermal oil heater.

The Permittee has requested that No. 2 fuel oil firing be removed from the permit.

The following table provides a summary of limits and/or standards for the material handling sources.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	**Affected source: (ID No. Pr-Heat1)** **0.60 pounds per million Btu heat input**	15A NCAC 02D .0503

Regulated Pollutant	Limits/Standards	Applicable Regulation
	Affected source: (ID Nos. 3593 and 3594) $E = 4.10P^{0.67}$ where; E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
Sulfur dioxide	Affected source: (**ID No. Pr-Heat1**) 2.3 pounds per million Btu heat input	15A NCAC 02D .0516
Visible emissions	20 percent opacity	15A NCAC 02D .0521
HAPs	**Affected source:(**ID No. Pr-Heat1**)** Best Combustion Practices	15A NCAC 02D .1109
Volatile organic compounds	Work Practice Standards See Section 2.2 A.1.	15A NCAC 02D .0958
Toxic air pollutants	See Section 2.2 A.2; **State-enforceable only**	15A NCAC 02D .1100
Odors	See Section 2.2 A.3; **State-enforceable only**	15A NCAC 02D .1806

Hot oil heater

15A NCAC 02D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS
15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES
15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

With the removal of the capacity to fire No. 2 fuel oil, the hot oil heater is natural gas-fired only. As a natural gas-fired indirect heat exchanger, the visible, PM and SO2 emissions are minimal. As such, no M/R/R applies for the above regulations, pursuant to current DAQ policy. Thus, the visible emissions (VE) monitoring requirement (once per week VE readings) for the hot oil heater will be removed. No other substantive changes will be made to the existing permit conditions.

15A NCAC 02D .1109: CAA 112(j); CASE-BY-CASE MACT FOR BOILERS AND PROCESS HEATERS

The discussion relevant here is identical to the discussion for the hot oil heaters in Section 2.1.D. above.

15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

The discussion relevant here is identical to the discussion for the hot oiler heaters in Section 2.1.D. above with the following exception. This heater has a heat input of less than 5 MMBtu/hr and thus only has tune-up requirements once every 5 years. All other requirements are identical to the hot oil heaters in Section 2.1.D. A condition with all applicable requirements will be added to the permit.

Laminating Presses

15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

The current permit requires typical M/R/R for bagfilter controlled PM emission sources. No substantive changes will be made to the existing permit condition.

15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

The current permit requires weekly visible emissions (VE) readings. The weekly frequency is consistent with the other PM sources at the facility. No substantive changes will be made to the existing permit condition.

Both Emission Sources

STATE ENFORCEABLE ONLY - 15A NCAC 02D .1100 TOXIC AIR POLLUTANTS
15A NCAC 02Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION
15A NCAC 02D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS

STATE ENFORCEABLE ONLY - 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

The requirements of these regulations will be discussed in the facility-wide regulatory consideration section of this review document.

G. Four MDF Resin Storage Tanks (ID Nos. MDFR-1, MDFR-2, MDFR-3, MDFR-4)

These resin storage tanks were permitted at the same time as the rest of the new MDF plant (permit no. T32). They have very low emissions of VOCs and formaldehyde, which are estimated to be 35 lb/yr. They were moved from the insignificant activities list to the permitted equipment list in permit no. T33 because of a 02D .1100 toxic air pollutant modeling demonstration.
Under current DAQ policy, sources that meet the definition of insignificant activities due to size or production rate pursuant to 02Q .0503 may be placed on the insignificant activities list of the permit. The sources, however still are subject to all applicable requirements. The Permittee has requested that these tanks be moved to the insignificant activities list.

The following table provides a summary of limits and/or standards for the material handling sources.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Volatile organic compounds	Work Practice Standards See Section 2.2 A.1.	15A NCAC 02D .0958
Toxic air pollutants	See Section 2.2 A.2; **State-enforceable only**	15A NCAC 02D .1100
Odors	Odorous emissions must be controlled Section 2.2. A.3; **State-enforceable only**	15A NCAC 02D .1806

The requirements of these regulations will be discussed in the facility-wide regulatory consideration section of this review document.

H. and I. The following combustion sources:

Table H.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
DFP-1 **MACT ZZZZ NSPS IIII**	Diesel fuel -fired Fire Pump Engine(347 Brake Horsepower output)	NA	NA

Table I.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-21 **MACT ZZZZ**	Diesel Fuel -fired Emergency Generator(1592 Brake Horsepower output)	NA	NA
ES-ODG **MACT ZZZZ**	Diesel-fuel Fired Emergency Generator (465 horsepower, 3,026 million Btu per hour heat input)	NA	NA

The purpose of these emission sources are self-explanatory. Using the EPA/DAQ policy of estimating potential emissions of emergency engines using 500 hours per year results in engines DFP-1 and ES-ODG each having potential emissions of all pollutants of less than 5 tpy. Under current DAQ policy, sources that meet the definition of insignificant activities due to size or production rate pursuant to 02Q .0503 may be placed on the insignificant

activities list of the permit. The sources however, are still subject to all applicable requirements. The Permittee has requested that these engines be moved to the insignificant activities list. ES-21 however shall remain.

The following table provides a summary of limits and/or standards for the emission sources above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Visible emissions	20 percent opacity	15A NCAC 02D .0521
Sulfur dioxide	2.3 pounds per million Btu heat input **(excluding DFP-1)**	15A NCAC 02D .0516
Various	New Source Performance Standards	15A NCAC 02D .0524 [40 CFR Part 60, Subpart IIII]
Toxic Air Pollutants	**State-enforceable only**	15A NCAC 02D .1100
Hazardous Air Pollutants	Maximum Achievable Control Technology	15A NCAC 02D .1111 [40 CFR Part 63, Subpart ZZZZ]
Odors	See Section 2.2 A.3; **State-enforceable only**	15A NCAC 02D .1806

With the exception of 02D .1111 (MACT ZZZZ) and 02D .0524 (NSPS IIII), these sources have no ongoing M/R/R requirements. Pursuant to 40 CFR 63.6590(b)(3)(iii), ES-21 does not have to meet the requirements of 40 CFR 63 Subpart ZZZZ and Subpart A, including initial notification requirements. For DFP-1, compliance with 02D .1111 (MACT ZZZZ) is demonstrated through compliance with 02D .0524 (NSPS IIII. 02D .0524 requires proper operation and maintenance as well as recordkeeping of operation. For ES-ODG, MACT ZZZZ requires a regular schedule of oil changes, air cleaner, hoses and belts inspection, as well as recordkeeping and reporting. The DAQ website maintains sample permit conditions for this category (emergency) of engine that do not have the regulatory requirements explicitly in the permit. Continued compliance with these regulations are expected.

The requirements of the other regulations will be discussed in the facility-wide regulatory consideration section of this review document.

STATE ENFORCEABLE ONLY - 15A NCAC 02D .1100 TOXIC AIR POLLUTANTS
STATE ENFORCEABLE ONLY - 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS
The requirements of these regulations will be discussed in the facility-wide regulatory consideration section of this review document.

Facility-wide regulatory considerations

STATE ENFORCEABLE ONLY
15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

To date there have been no compliance issues with odors. Continued compliance is expected, No changes will be made to the existing permit condition.

15A NCAC 02D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS

This regulation applies facility-wide and handles the handling of VOC containing materials which are a source of fugitive VOC emissions. The facility has had no compliance issues with this regulation. Continued compliance is expected, No changes will be made to the existing permit condition.

STATE ENFORCEABLE ONLY
15A NCAC 02D .1100 TOXIC AIR POLLUTANTS

In 2012, the facility conducted a facility-wide dispersion modeling analysis and showed that all TAPS emitted were well below the AALs with the exception of formaldehyde which was modeled at 89% of its Acceptable Ambient Level (AAL). This modeling demonstration assumed MACT compliant controls were in place.

In 2015, the facility conducted another modeling demonstration just for formaldehyde. In this demonstration, the effect of the MACT compliant controls were not included. This demonstration was conducted primarily to show that the facility would remain in compliance with 02D .1100 even without formaldehyde (i.e., MACT DDDD) controls. The DAQ issued a memo on August 20, 2015, which stated the following:

> The modeling was conducted in order to demonstrate compliance with the AAL for formaldehyde whose emissions increased due to the shutdown of the PGT emissions controls unit listed in the permit. The modeling adequately demonstrates compliance with the AAL, on a source-by-source basis, for formaldehyde. The maximum one--hour average concentration modeled was 138 $\mu g/m^3$, or 92 percent of the formaldehyde AAL of 150 $\mu g/m^{3.}$

Again, this modeling demonstration includes the estimated uncontrolled emissions of formaldehyde from both the MDF dryers and the PB dryer, the largest sources of formaldehyde on site. The modeling also includes the effect of redirecting the MDF press emissions being exhausted to the PB plant energy system (i.e., a combustion source), hence probably part of the reason why the AAL impacts were similar with and without formaldehyde controls.

Thus, it appears the facility is in compliance with 02D. 1100 even without the MACT compliant controls in place. Pursuant to 15A NCAC 02Q .0702 Exemptions, sources subject to a MACT do not require a permit to emit TAPs. The existing permit contains a number of permit conditions addressing the applicability of 02D .1100. Based on the 2015 modeling demonstration results, all 02D .1100 conditions will be removed from the revised air permit. At this facility, all sources of TAPs are subject to a MACT.

15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY
(40 CFR 63, Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products)

This regulation affects most of the emission sources at both the PB and MDF plants however most have no applicable requirements. Most of the requirements apply to the dryers, presses and energy systems. The current compliance strategy is the use of add-on controls involving the much discussed packed bed scrubbers with photochemical gas treatment (PGTs). As discussed in Section III, the Permittee is currently operating under a SOC to find control alternatives to the use of the PGTs. The PGTs are currently shut down at both plants. The Permittee has requested to install a biofilter at the MDF plant and is fully discussed in Section III. The MACT requires performance testing and monitoring parameters establishing during the testing to be used to demonstrate ongoing compliance. This information will be submitted with the Notification of Compliance Status also required by the rule.

The current permit condition will be revised to include the following language.

i. The Permittee shall submit a permit application with the Notification of Compliance Status required in condition y. to revise the permit to include monitoring parameters for the biofilter (ID NO. CD18).

In this way, the permit will subsequently be revised to include practically enforceable monitoring parameters consistent with TV permitting requirements to demonstrate ongoing compliance.

Regarding the PB plant, the SOC has milestones the Permittee must meet to eventually install a new control system and demonstrate compliance with the rule. The Permittee has not determined what that control strategy will be as of yet. Other than including the application submittal requirement addressed above, no other changes will be made to the existing current condition.

15A NCAC 02Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION

The permit condition at 2.2.B.1 addresses PSD avoidance for the sources at the MDF plant. This condition was first included in the permit upon the permitting of the "new" MDF plant in Permit no. T32. The condition has been revised since as can be seen in Section III permitting history, most notably in permit nos. T43 and T44. The current permit condition contains numerous emission factors depending on the pollutant and operating scenario.

The current permit allows the monitoring parameter for NOx and the emission factors in Table 2.2.B.1. to be revised administratively pending DAQ review. The DAQ has found this to be inconsistent with 15A NCAC 02Q .0514, ADMINISTRATIVE PERMIT AMENDMENTS. As a result, the following language will be added to the permit condition addressing the emission factors:

> If the Permittee conducts source testing that results in any emission factors greater than those in Table 2.2.B.1, the Permittee shall, upon approval by the DAQ, attach the approval memo containing the revised emission factors to this permit and use those factors in place of the respective emission factors in Table 2.2.B.1

The following language will be added to the condition addressing the urea/water solution injection rate monitoring parameter:

> If the Permittee conducts source testing such that the NOx emission factor listed in Table 2.2.B.1 was revaluated at a different injection rate or urea concentration, the Permittee shall, upon approval by the DAQ, attach the approval memo containing the revised operating parameters to this permit and maintain the parameters in the associated operating ranges contained therein.

15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING [40 CFR 64]

On, 12/30/2015, the Permittee submitted the following tables which describe the applicability of CAM to the emission sources.

CAM Applicability
MDF Plant

Emission Source ID No	Emission Source Description	Control Device ID No	Control System Description	CAM Applicability
ES-01	Refiners	CD-01 or CD-02/CD-14	Refiner abort cyclone (SSM) Dryers (normal operation)	No. Uncontrolled emissions are less than 100 TPY PM.
ES-02A	Energy system	CD-02A, CD-02/CD-14	Urea injection for NOx Scrubbers for PM. MACT SOC for VOC.	Yes. Device is subject to CAM for PM and NOx.
ES-02B	Two stage dryer system	CD-02/CD-14	Scrubbers for PM. MACT SOC for VOC.	Yes. Device is subject to CAM for PM.
ES-02C and D	Two backup natural gas-fired dryer burners	N/A	No controls.	No. No controls.
ES-03	Fiber Sifter System	CD-03	Fabric filter for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-04	Forming Line Clean-Up System	CD-04	Fabric filter for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-05	Mat Reject System	CD-05	Fabric filter for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-06B	MDF Board Cooler	CD-02/CD-14	N/A	N/A. Routed through energy system, which is subject to CAM.

Emission Source ID No	Emission Source Description	Control Device ID No	Control System Description	CAM Applicability
ES-07	Saw Systems	CD-07	Fabric filter for PM.	No. Filter is used to capture saw waste material and reroute to energy system for combustion. Inherent process equipment.
ES-08	Sander System No. 1	CD-08	Fabric filter for PM.	No. Filter is used to capture sanderdust and reroute to energy system for combustion. Inherent process equipment.
ES-09	Recycled Fiber Silo No. 1	CD-09	Bin vent filter for PM.	No. Filter is used to prevent dispersion of combustible dust. Inherent safety/process equipment.
ES-10	Sander System No. 2	CD-10	Fabric filter for PM.	No. Filter is used to capture sanderdust and reroute to energy system for combustion. Inherent process equipment.
ES-12	Sander Dust Silo No. 1	CD-12	Bin vent filter for PM.	No. Filter is used to prevent dispersion of combustible dust. Inherent safety/process equipment.
ES-13	Sawdust and Reject Fiber Silo	CD-13	Bin vent filter for PM.	No. Filter is used to prevent dispersion of combustible dust. Inherent safety/process equipment.
ES-15	Recycled Fiber Silo No. 2	CD-15	Bin vent filter for PM.	No. Filter is used to prevent dispersion of combustible dust. Inherent safety/process equipment.
ES-17	Sander Dust Silo No. 2	CD-17	Bin vent filter for PM.	No. Filter is used to capture sanderdust and reroute to energy system for combustion. Inherent process equipment.
ES-16	MDF Press	CD-16	Scrubbers for PM. MACT SOC for VOC.	No. Uncontrolled emissions of PM do not exceed 100 TPY. VOC is subject to MACT.
ES-18, -19, -20	Three natural gas-fired hot oil heaters	NA	NA	No. No controls.

CAM Applicability
Particleboard Plant

Emission Source ID No	Emission Source Description	Control Device ID No.	Control System Description	CAM Applicability
ES-3501	Sawdust Rock and Metal Separator	CD-3501	Cyclone and Baghouse	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-1430	Surface Layer Dryer with wood/NG burner	CD-PB-WESP	Wet ESP for PM MACT SOC for VOC	Yes. Device is subject to CAM for PM.
ES-1420	Core Layer Dryer with wood/NG burner	CD-PB-WESP	Wet ESP for PM MACT SOC for VOC	Yes. Device is subject to CAM for PM.
ES-1410	Core Layer Dryer #2 (down)	N/A	Not in operation	N/A. Not in operation
ES-3201	Wellons NG (or wood)	N/A	No controls on current configuration.	No. No controls.
ES-3515	Surface Material Transport	CD-3525 CD-3515	Fabric filters for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-3525	Surface Formers and Mat Dump	CD-3525	Fabric filter for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-3535	Flying Cut off Saw, Pretrim Saws, & Production Collection	CD-3535	Fabric filter for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-3545	Particleboard Finishing Sander	CD-2006 CD-3575	Fabric filters for PM.	No. Filter is used to capture sanderdust fuel and routed to burners for combustion. Inherent process equipment.
DEF-2010	PB Press	MACT SOC	N/A	N/A. Routed through dryers, which are subject to CAM.
PB-BC	PB Board Cooler	N/A	N/A	No. No controls.
ES-3565	PB Calibrating Sander	CD-5001 CD-3575	Fabric filters for PM.	No. Filter is used to capture sanderdust fuel and routed to burners for combustion. Inherent process equipment.

Emission Source ID No	Emission Source Description	Control Device ID No.	Control System Description	CAM Applicability
ES-3555	Schelling Saw Board trim	CD-4005	Fabric filter for PM.	No. Filter is used to capture board waste and routed to burners for combustion. Inherent process equipment.
ES-3575	Sander filter transport for ES-3545/3565	CD-3575	Fabric filter for PM.	No. Filter is used to capture sanderdust fuel and routed to burners for combustion. Inherent process equipment.
ES-3585	PZKR Green Chip Flakers	CD-3585	Fabric filter for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-3595	Oversize Material Pallmann Mill	CD-3595	Fabric filter for PM.	No. Filter is used to capture process material and reroute to production. Inherent process equipment.
ES-3577	Dry waste transport system	CD-3577	Fabric filter for PM.	No. Filter is used to capture board waste and routed to burners for combustion. Inherent process equipment.
ES-3593/3594	Lamination Presses	CD-3593	Fabric filter for PM.	No. Uncontrolled emissions are less than 100 TPY.
Pr-Heat1	Lamination heater	N/A	N/A	No controls.

A review of the table shows that the Permittee considers all the fabric filters on-site "inherent process equipment."

40 CFR 64.1 Definitions states:

> Inherent process equipment means equipment that is necessary for the proper or safe functioning of the process, or material recovery equipment that the owner or operator documents is installed and operated primarily for purposes other than compliance with air pollution regulations. Equipment that must be operated at an efficiency higher than that achieved during normal process operations in order to comply with the applicable emission limitation or standard is not inherent process equipment. For the purposes of this part, inherent process equipment is not considered a control device.

Pursuant to 64.2 Applicability, an emission source at (or rather a pollutant-specific emissions unit, or PSEU) at a TV facility is subject to CAM if all the following are true:

(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;

(2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and

(3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit," as defined in §64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.

Thus, in the particular cases at the subject facility, conditions 2 and 3 are not true and hence the associated emission sources would not be subject to CAM.

On January 11, 2015, the Permittee submitted a written justification for the fabric filters to be considered inherent process equipment. An excerpt is as follows:

> The bag filters and bin vent filters were installed for purposes of preventing accumulation of combustible dust in the process, recycling material, and transporting material within the process for reuse or combustion. If a filter malfunctions, the process is shut down, and the filter is repaired because it is a critical element to the safe and normal operation of the process.

Upon review, and strictly for purposes of the determination of CAM applicability, the DAQ accepts the Permittee's argument regarding the filter systems.

At the PDF plant the WESP is used to demonstrate compliance with the 02D .0515 PM emission standard and the 02D .0530 BACT limit. A CAM condition was included in the revised permit using secondary voltage and current as indicators.

The WESP is also referenced as BACT for VOC under 02D .0530. A CAM condition was included in the revised permit using liquid flow rate as an indicator.

At the MDF plant the wet scrubbers are used primarily to comply with the 02D .0515 PM standard on the energy system, dryers and press, which have a PTE for PM greater than 100 tpy. Thus CAM applies for PM to these scrubbers. A CAM condition was included in the revised permit using liquid flow rates and pressure drops as an indicator.

VI. NSPS, NESHAPS, PSD, Attainment Status, 112(r), and CAM

NSPS

See discussion in Section V.

NESHAP/MACT

The facility is a major source of HAP. See discussion in Section V.

PSD

Chatham County is in attainment for all pollutants. See discussion in Section V.

CAM

CAM applicability is addressed in Section V of this review.

VI. Compliance History

Below is the 5- year violation history of the subject facility as of the most recent compliance inspection date of 05/08/2015.

Five Year Violation History:

Date	Letter Type	Rule Violated	Violation Resolution Date
03/12/2013	NOV/NRE	02D .0521 Control of Visible Emissions	04/01/2013
03/12/2013	NOV/NRE	02D .0530 Prevention of Significant Deterioration	04/01/2013
03/12/2013	NOV/NRE	Part 63 - NESHAP/MACT Subpart DDDD Plywood and Composite Wood Products Mfg.	04/01/2013
05/03/2012	NOV/NRE	02D .0958 Work Practices Sources of Volatile Organic Compounds	06/01/2012
05/03/2012	NOV/NRE	02D .0530 Prevention of Significant Deterioration	06/01/2012
05/03/2012	NOV/NRE	02D .0521 Control of Visible Emissions	06/01/2012
04/12/2012	NOV/NRE	02D .0521 Control of Visible Emissions	05/02/2012
04/12/2012	NOV/NRE	Part 63 - NESHAP/MACT Subpart DDDD Plywood and Composite Wood Products Mfg.	05/02/2012
11/14/2011	NOV	02Q .0504 Option Obtaining Construction and Operation Permit	02/10/2012
04/25/2011	NOV	02D .0512 Particulates Wood Products Finishing Plants	05/20/2011
04/25/2011	NOV	02D .0521 Control of Visible Emissions	05/20/2011
02/17/2011	NOV/NRE	Part 60 - NSPS Subpart A General Provisions	05/05/2011
02/17/2011	NOV/NRE	Part 60 - NSPS Subpart A General Provisions	06/18/2010
02/17/2011	NOV/NRE	Permit Condition	05/05/2011
02/17/2011	NOV/NRE	Permit Condition	01/21/2011
02/17/2011	NOV/NRE	Permit Condition	12/18/2010
02/17/2011	NOV/NRE	Permit Condition	04/11/2010
02/17/2011	NOV/NRE	Permit Condition	02/14/2011

The facility is currently operating under Special Order of Consent (SOC) 2015-02 as discussed in Section III. This SOC was entered into largely to address the MACT DDDD compliance issues associated with the technology chosen as a result of the previous SOC (2008-002). Under the SOC, the PB plant has approximately one year to determine the control strategy. Upon issuance of this permit, the MDF plant will have approximately 26 months to submit the Notification of Compliance Status to establish compliance with MACT DDDD.

VII. Changes Implemented in Revised Permit

Existing Condition No.	**New Condition No.**	**Changes**
Cover Letter	Same	• Updated permit revision numbers, issue and effective dates, etc.
Insignificant activities list	Same	• Added the 4 MDF resin tanks formerly in Section 2.1.G • Added the 347 BHP fire pump (DFP-1) formerly in Section 2.1.H.
Permit, page 1	Same	• Revised dates, permit numbers, etc.
Section 1 Permitted Equipment List	Same	• Removed all footnotes relating to satisfied permit application submittal requirement • Removed reference to the PGTs at the MDF plant • Added reference to the biofilter at the MDF plant • Renumbered existing venturi scrubbers • Revised descriptor for ES-06-B from MDF Board Cooler to MDF Board Cooler and Press Hall • For ES-16(the MDF Press), removed reference to scrubber CD16. With the reconfiguration of the exhaust of CD 16 from the biofilter to the mixing chamber which is routed to the energy systems combustion air intake or to the dryers, the scrubber no longer acts as an air emissions control device. Reference was added to CD02 and CD14, which will exhaust to the biofilter CD18 once installed.
Global	Same	• Updated regulation references from "2D" and "2Q" to "02D" and "02Q" to be consistent with regulation nomenclature.
Global	Same	▪ In all "standard" testing conditions, the language was simplified to read: **Testing** [15A NCAC 02Q .0508(f)] X. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section XYZ above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .XYZ. General Condition JJ addresses all the testing requirements pursuant to 15A NCAC 02D .2600.
Global	Same	▪ Removed reference to specific equipment ID numbers in various permit conditions when it was clear and unambiguous by context which equipment was being addressed.
Global	Same	▪ Removed reference to all 02D .1100 conditions from the permit
2.1.A	Same	Material Handling Sources
		▪ Revised equipment listing into table form
		▪ Revised applicable regulations table to include 02D .1111
1.a.	Same	▪ Revised 02D .0521 condition language to be consistent with current shell language. No changes in intent were made
2.1.B.	Same	▪ Controlled material handling sources

Existing Condition No.	**New Condition No.**	**Changes**
2.c.	Same	▪ Removed the following language as it is no longer necessary . *The Permittee shall establish normal for the source within 30 days of initial startup*
2.1.C.	Same	▪ MDF HAP-emitting process sources
		▪ Revised Table 2.1C to remove reference to the PGT systems, include the new biofilter (ID No.CD18), revised the emission points and revised the existing venturi scrubbers ID Nos. at the request of the Permittee. ▪ For ES-16(the MDF Press), removed reference to scrubber CD16. With the reconfiguration of the exhaust of CD 16 from the biofilter to the mixing chamber which is routed to the energy systems combustion air intake or to the dryers, the scrubber no longer acts as an air emissions control device. Reference was added to CD02 and CD14, which will exhaust to the biofilter CD18 once installed.
1.	Same	▪ 02D .0515 condition
c.	Same	Given the change in configuration and the unknown duration until the biofilter is installed and operational, the following language was added: i. Upon installation of the biofilter (ID No. CD18), the Permittee need only test the outlet of the biofilter if desired.
f.	Same	▪ Removed the language describing administrative revision of the monitoring parameters and replaced it with the following: If the Permittee revaluates compliance with the emission limit in condition a. at parameter ranges outside of those in Table 2.1.C.1.f. below, the Permittee shall, upon approval by the DAQ, attach the approval memo containing the revised operating parameters to this permit and maintain the parameters in the associated operating ranges contained therein. ▪ Removed parameters for CD16 as it no longer acts as an air pollution control device
2.1.C.2	same	02D .0521 condition
c.	same	▪ Removed reference to emission point EP16 as it no longer exists. The scrubber (CD16) outlet has been routed to a mixing chamber which is ultimately routed to the combustion zone of the energy system which will ultimately be controlled by the biofilter. ▪ Added a requirement to re-establish “normal “upon installation of the biofilter, at which point readings will be conducted at the outlet of the biofilter (emission point EP18)
NA	4	▪ Added 02D .0614 (CAM) condition
2.1.D.	Same	▪ Three natural gas fired oil heaters
		▪ Revised equipment listing into table form
4.b.	NA	▪ This initial start-up notification requirement has been met and was removed from the permit
4.c.	4.b.	▪ Simple renumbering
5.a	Same	▪ Added 112(j) “sunset” language
Na	6	▪ Added MACT DDDDD condition with compliance date of May 20, 2019

Existing Condition No.	**New Condition No.**	**Changes**
2.1.E.	Same	▪ Particleboard mill operations ▪ Put affected equipment into tabular form ▪ Created two tables; one for the combustion sources and dryers; one for the PM (primarily) sources which are mainly woodworking operations ▪ Renumbered conditions to reflect the removal of existing conditions 1 and 8
1.	NA	▪ Removed 02D .0504 condition as it applies only to installations in which wood is burned for the primary purpose of producing heat or power by indirect heat transfer.
2.1.E.2	Same	02D .0512 condition
.b.	Same.	▪ Removed reference to each specific piece of equipment and included reference to affected source table
2.e.	Same	▪ Removed reference to each specific piece of equipment and included reference to affected source table
2.1.E.3	Same	02D .0515 condition
a, c	same	▪ Removed reference to each specific piece of equipment and included reference to affected source table
2.1.E.4	Same	02D .0516 condition
a.	Same	▪ Removed reference to each specific piece of equipment and included reference to affected source table
2.1.E.5	Same	02D.0521 condition renumbered
a.	Same	▪ Revised format to be consistent with current permit shell standard. No substantive changes were made.
c	Same	▪ Removed the following language as the requirement has been satisfied. The Permittee shall establish normal for the emission sources controlled by the scrubber (ID No. CD-PB-PGT) within the first 30 days of the initial startup of the scrubber (ID No. CD-PB-PGT) following the effective date of air permit no. 03449T39. The Permittee shall re-establish normal for the emission sources ES-3515 and ES-3545 within the first 30 days of their initial startup following the effective date of air permit no. 03449T41
2.1.E.6	same	02D.0530 condition
6.c	Same	▪ Revised testing requirement for dryer 1410. 1410 has not been started up since the testing requirement was added in permit no. T31.
6.d.	Same	▪ Removed reference to each specific piece of equipment and included reference to affected source table
e, f, g	e	▪ Combined conditions as they are identical
h	f	▪ Simple renumbering ▪ Revised voltage and current monitoring parameters. These parameters were those used during the compliance testing conducted in 2009. ▪ Added water injection rate as a monitoring parameter ▪ Added paragraph iv., which establishes a procedure for the Permittee to establish new operating parameters without modifying the permit
i, j, k l	i	▪ Combined conditions as they are identical
m	Same	▪ Removed reference to each specific piece of equipment and included reference to affected source table
o, u, z, dd	b	▪ Consolidated testing requirements into one condition
p, v, aa	c	▪ Consolidated testing requirements into one condition
q, w, bb	g	▪ Consolidated into one monitoring requirement
r, w, bb	j	▪ Consolidated into one monitoring requirement
s, y, cc	m	▪ Consolidated into one reporting requirement
t, y, cc	n	▪ Consolidated into one reporting requirement
x.	NA	▪ Condition was removed as the requirement has been satisfied

Existing Condition No.	**New Condition No.**	**Changes**
ee	h	▪ Simple renumbering
ff	o	▪ Simple renumbering
gg	k	▪ Simple renumbering
hh	l	▪ Simple renumbering
ii	p	▪ Simple renumbering
2.1.E.7.	Same	▪ 02D .0614 (40CFR 64) CAM condition PM CAM requirements were substantially revised to be consistent with current DAQ requirements
8	NA	▪ Removed 02D .1100 condition
2.1.E.10	2.1.E.1	▪ Renumbered the 02D .0504 condition
2.1.E.11	NA	▪ Removed the notification requirement as it was satisfied on 09/18/2014
2.1.F.	Same	▪ Laminator Mill
		▪ Removed reference to No. 2 fuel oil fired for the hot oil heater (Pr-Heat1)
1.a.	Same	▪ Removed reference to No. 2 fuel oil and used oil
3.c.	Same	▪ Removed reference to No. 2 fuel oil
4.c.	Same	▪ Removed reference to hot oil heater Pr-Heat1. This source no longer has a weekly VE requirement.
5.a.	Same	▪ Added 112(j) "sunset" language
NA	6	▪ Added MACT DDDDD condition with compliance date of May 20, 2019
2.1.G.	NA	▪ The 4 MDF resin tanks were moved to the insignificant activities list
		▪
2.1.H.	NA	▪ The 347 BHP fire pump (DFP-1) was moved to the insignificant activities list
2.1.I		▪ The 465 BHP emergency generator (ES-ODG) was moved to the insignificant activities list
4.	NA	▪ Removed 02D .1100 condition
5.	NA	▪ The 02D .1111 (MACT ZZZZ) condition for ES-ODG was removed from the permit
2.2	Same	▪ Multiple Source requirements
2.		▪ Removed 02D .1100/02Q 0705 condition
3	2	▪ Simple renumbering of the 02D .1806 condition
4	3	02D .1111 (MACT Subpart DDDD) condition
NA	a.i.	▪ Added a permit application requirement to include monitoring parameters for the biofilter. The application will be required to be submitted with the Notification of Compliance Status.
2.2.B.	Same	MDF plant
1.	Same	02Q .0317 PSD avoidance condition
b	same	▪ Added testing requirement after the installation of the biofilter.
c.	Same	▪ The term "minimum" was added to the urea injection rate requirement ▪ The following language was removed "This injection rate may be revised administratively pending DAQ review"

Existing Condition No.	New Condition No.	Changes
e	Same	▪ The following language was removed "These emission factors may be revised administratively pending DAQ review. If subsequent data suggests that any of the emission factors underestimate emissions, the Permittee shall submit a permit application to revise the emission factors in question" ▪ The following language was added: "If the Permittee conducts source testing such that the NOx emission factor listed in Table 2.2.B.1 was revaluated at a different injection rate or urea concentration, the Permittee shall, upon approval by the DAQ, attach the approval memo containing the revised operating parameters to this permit and maintain the parameters in the associated operating ranges contained therein."
Section 3 – General Conditions	Same	▪ Section was revised from v.3.6 to current shell version 4.0 (12/17/2015). Only minor changes were made. Changes include: • Updating regulation references from "2D" and "2Q" to "02D" and "02Q" to be consistent with regulation nomenclature. • References to DENR were revised to DEQ

VIII. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. No affected States or areas are within 50 miles of this facility.

IX. Recommendations

~~It is recommended that permit no. 02688T41 be issued.~~